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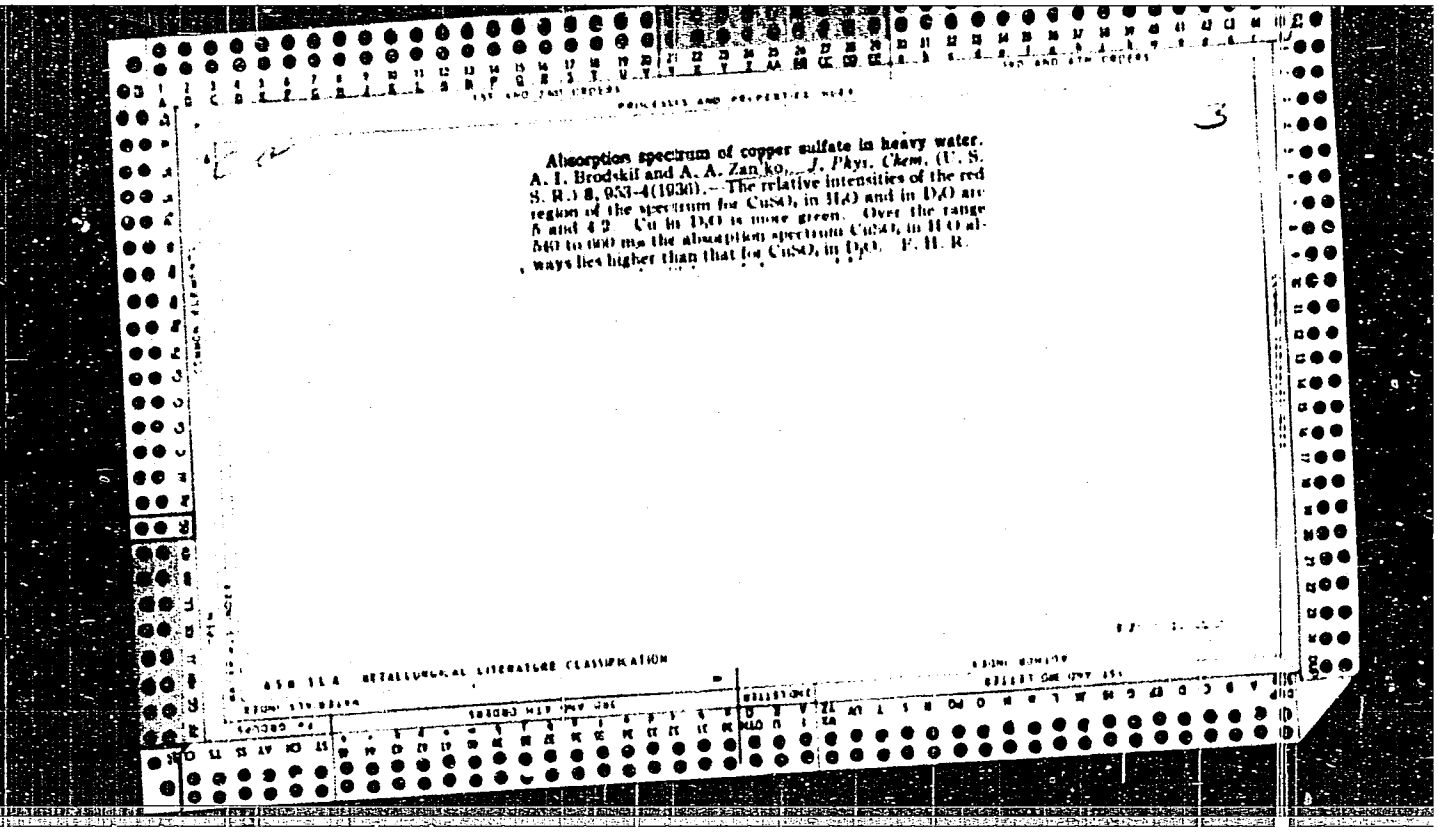

Absorption spectrum of copper sulfate in heavy water. A. I. Brodskiĭ and A. A. Zan'ko. *J. Phys. Chem.* (U. S. S. R.) 8, 953-4(1936).—The relative intensities of the red region of the spectrum for $CuSO_4$ in H_2O and in D_2O are 5 and 4.2. Cu in D_2O is more green. Over the range 560 to 600 mμ the absorption spectrum $CuSO_4$ in H_2O always lies higher than that for $CuSO_4$ in D_2O. F. H. R.

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ZAN'KO, A.A.

Amperometric determination of magnesium. A. A. Zan'ko and L. D. Pantelcyva. *Trudy Komissii Anal. Khim., Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 4(7), 135–40 (1952).—The behavior of 8-quinolinol (oxine) was studied. Mg was detd. in salts, and in rocks contg. Ca, Fe, and Al by amperometric titration with oxine soln. The usual app., dropping Hg electrode and satd. calomel reference electrode, was used. Oxine was reduced on the Hg electrode in an ammoniacal buffered soln. of pH 10.0, and gave a limiting current at a potential of 1.80 v. The oxine titrating soln. was prepd. by dissolving the reagent in AcOH and neutralizing the excess acid with NH_4OH. This soln. was standardized with $MgCl_2$ soln. The $MgCl_2$ soln. was dild. with the pH 10.0 buffer soln. to 50 ml. At a potential of 1.80 v., oxine soln. was added. The sample was stirred after each addn. Mg was not reduced and only excess reagent increased the current strongly. A small increase at the beginning of titration was caused by the soly. of the ppt. in excess Mg^{++}. In 50 ml., 1.5 mg. Mg could be detd. One ml. of the oxine soln. was equiv. to about 1.5 mg. Mg. Mg could not be quantitatively pptd. in the presence of CaC_2O_4 ppt. whether the excess of oxalate ion added was large or small. Interference of Fe and Al could not be prevented by pptg. Mg in strongly alk. solns. contg. tartrates. Rock samples contg. 3–25 mg. Mg were dissolved in 5 ml. 6*N* HCl and 2 drops of 3% H_2O_2. The soln. was warmed, neutralized by 7.5*N* NH_4OH to methyl orange, and 5% Na_2CO_3 soln. added to ppt. Ca. The soln. was filtered through a small filter and the filter was washed 3 times with water. The filtrate was saved. The ppt. was dissolved in 5 ml. of warm 6*N* HCl and the filter was washed well with water. The acid soln. and washings were returned to the original beaker and neutralized by NH_4OH to methyl orange. Ca was pptd. again. The ppt. was filtered on the same filter and washed. The filtrates were combined and neutralized to phenolphthalein with NH_4OH. The vol. was not over 50 ml. This soln. was titrated amperometrically with oxine.

Eurilla Mayerle

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Analytical Chemistry

AF 7573-54

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ZAN'KO, A.A.; SERDYUKOVA, O.K.

New method of dehydration of silicic acid in the analysis of silicates. Dokl. LPI 5 no. 1/2:165-168 '63. (MIRA 17:6)

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YURZHENKO, T.I.; ZAN'KO, A.A.; SERDYUKOVA, O.K.; MAMCHUR, L.P.

Polarographic and spectrophotometric study of some organic peroxide compounds. Dokl. LPI 5 no. 1/2:41-47 '63. (MIRA 17:6)

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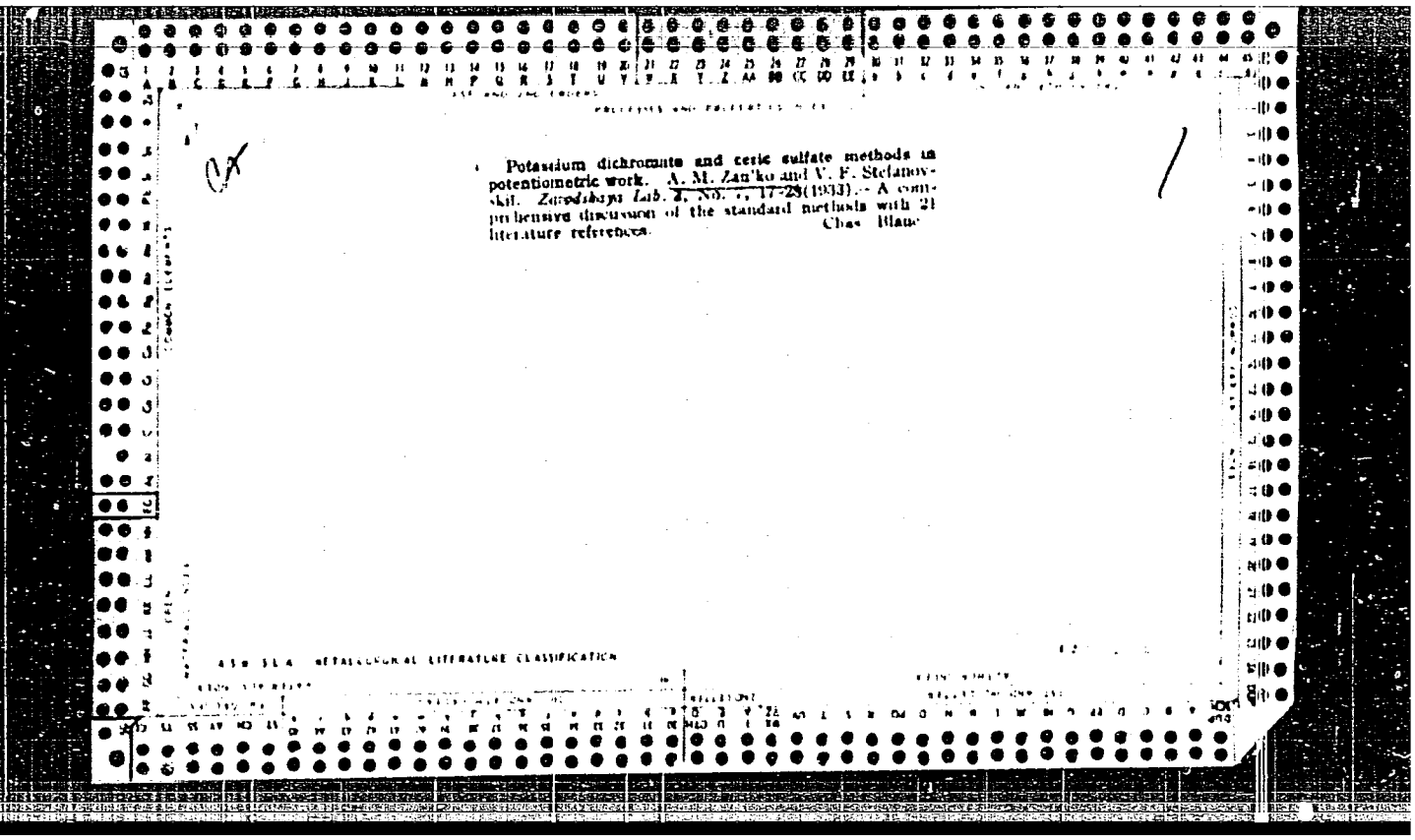

Potassium dichromate and ceric sulfate methods in potentiometric work. A. M. Zan'ko and V. F. Stefanovskii. *Zavodskaya Lab.* 2, No. 1, 17-28(1933).—A comprehensive discussion of the standard methods with 21 literature references. Chas. Blanc

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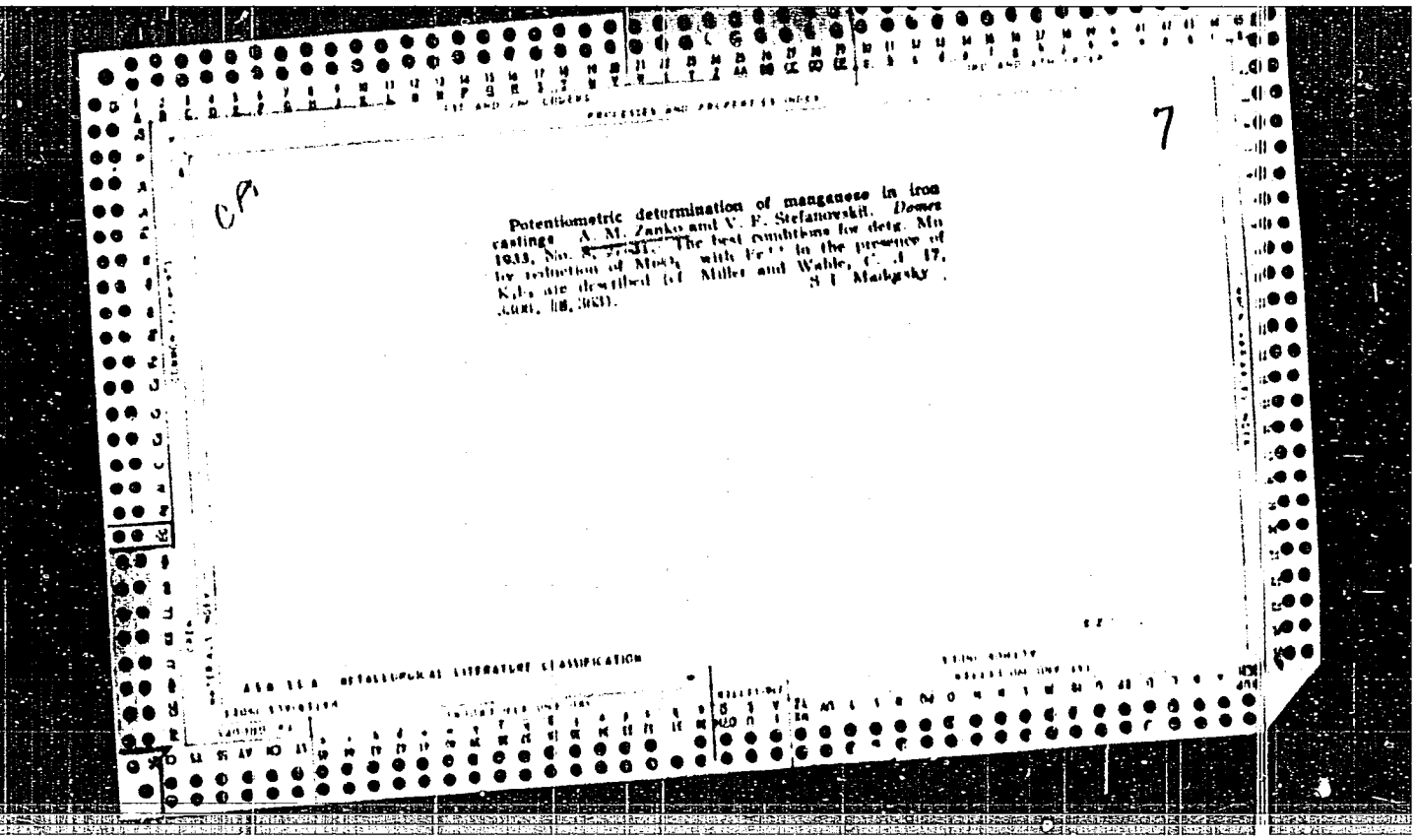

Potentiometric determination of manganese in iron castings. A. M. Zanko and V. F. Stefanovskii. *Domez* 1933, No. 8, [illegible]. The best conditions for detg. Mn by reduction of MnO_4^- with Fe^{++} in the presence of K_2F_2 are described (cf. Miller and Wahle, C. A. 17, [illegible], 18, [illegible]). S. I. Madorsky.

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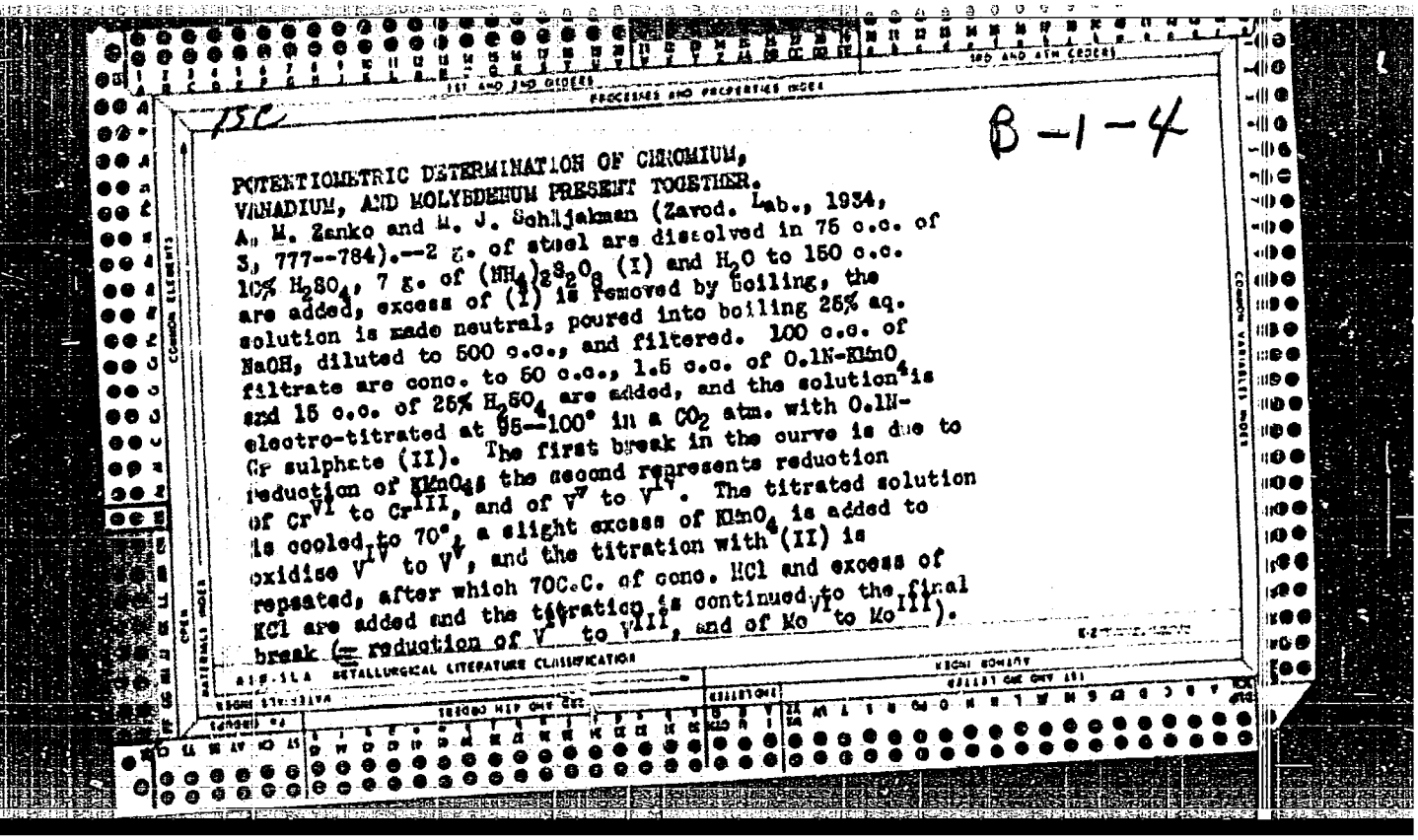

ISC

B-1-4

POTENTIOMETRIC DETERMINATION OF CHROMIUM, VANADIUM, AND MOLYBDENUM PRESENT TOGETHER. A. M. Zenko and M. J. Schiljakman (Zavod. Lab., 1934, 3, 777--784).--2 g. of steel are dissolved in 75 c.c. of 10% H_2SO_4, 7 g. of $(NH_4)_2S_2O_8$ (I) and H_2O to 150 c.c. are added, excess of (I) is removed by boiling, the solution is made neutral, poured into boiling 25% aq. NaOH, diluted to 500 c.c., and filtered. 100 c.c. of filtrate are conc. to 50 c.c., 1.5 c.c. of 0.1N-$KMnO_4$ and 15 c.c. of 25% H_2SO_4 are added, and the solution is electro-titrated at 95--100° in a CO_2 atm. with 0.1N-Cr sulphate (II). The first break in the curve is due to reduction of $KMnO_4$; the second represents reduction of Cr^{VI} to Cr^{III}, and of V^{V} to V^{IV}. The titrated solution is cooled to 70°, a slight excess of $KMnO_4$ is added to oxidise V^{IV} to V^{V}, and the titration with (II) is repeated, after which 70 c.c. of conc. HCl and excess of KCl are added and the titration is continued to the final break (= reduction of V^{V} to V^{III}, and of Mo^{VI} to Mo^{III}).

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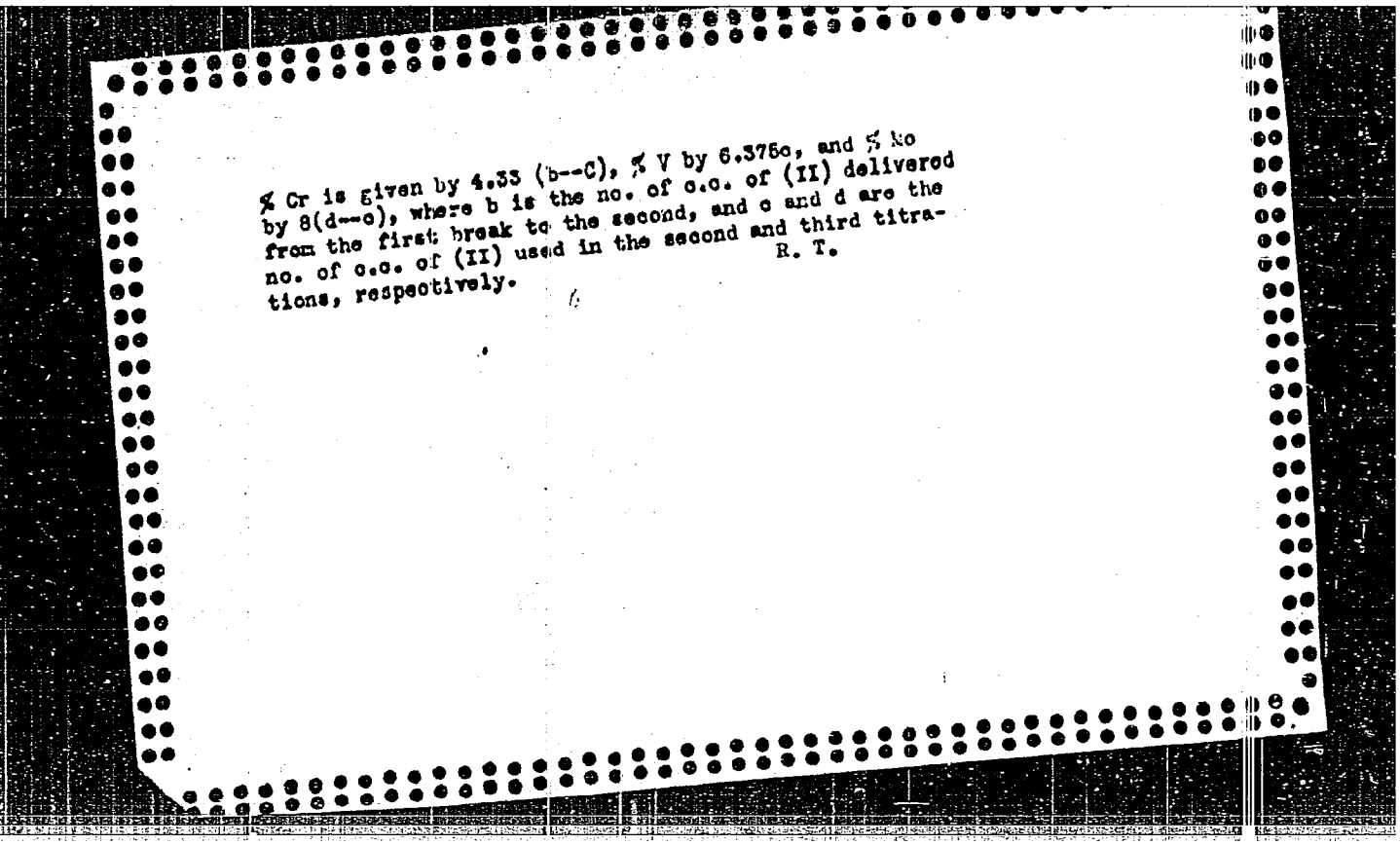

% Cr is given by 4.33 (b--C), % V by 6.376c, and % Mo by 8(d--c), where b is the no. of c.c. of (II) delivered from the first break to the second, and c and d are the no. of c.c. of (II) used in the second and third titrations, respectively.

R. T.

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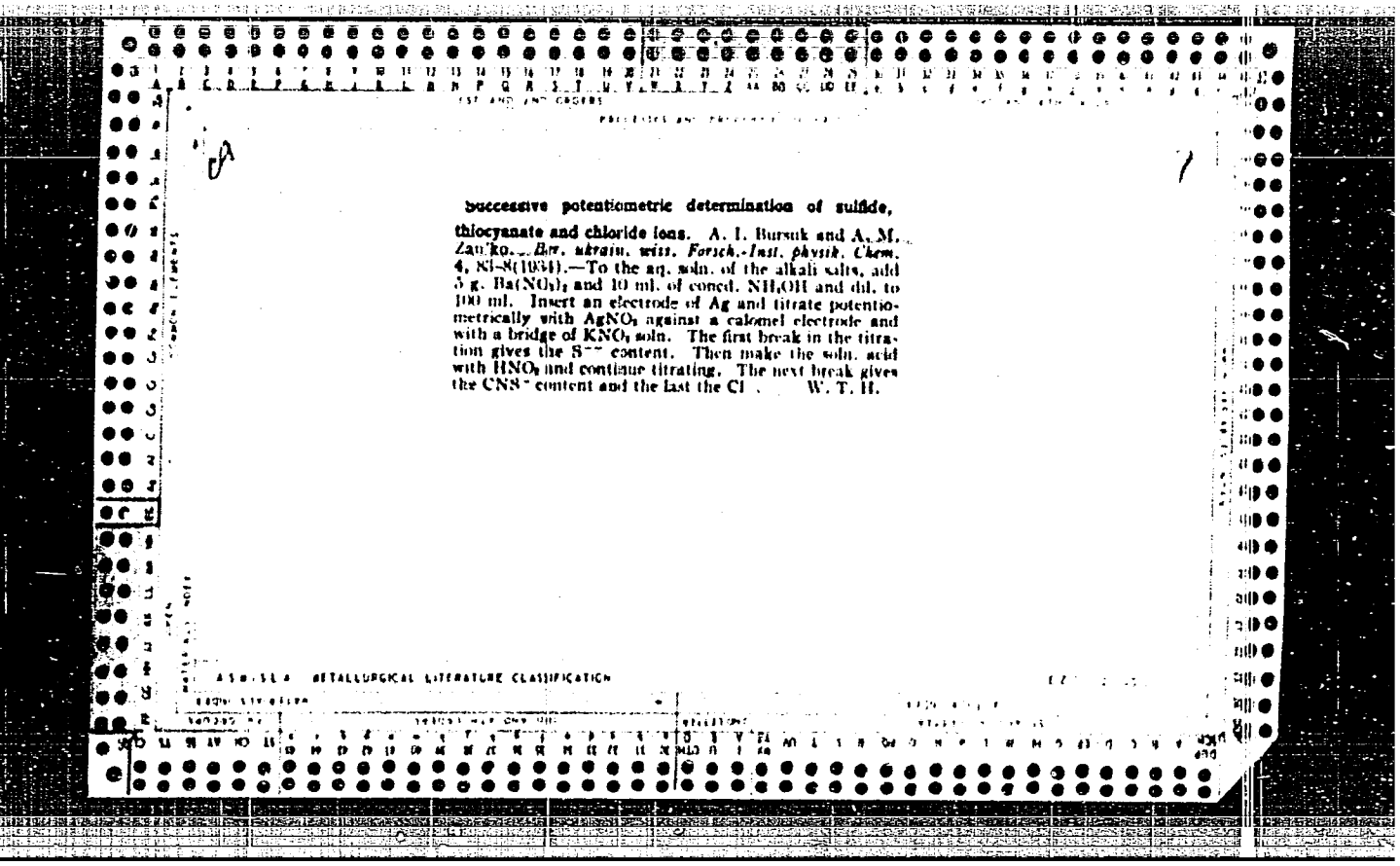

Successive potentiometric determination of sulfide, thiocyanate and chloride ions. A. I. Bursuk and A. M. Zan'ko. *Bar. ukrain. wiss. Forsch.-Inst. physik. Chem.* 4, 83-8(1934).—To the aq. soln. of the alkali salts, add 5 g. $Ba(NO_3)_2$ and 10 ml. of concd. NH_4OH and dil. to 100 ml. Insert an electrode of Ag and titrate potentiometrically with $AgNO_3$ against a calomel electrode and with a bridge of KNO_3 soln. The first break in the titration gives the S^{--} content. Then make the soln. acid with HNO_3 and continue titrating. The next break gives the CNS^- content and the last the Cl^-. W. T. H.

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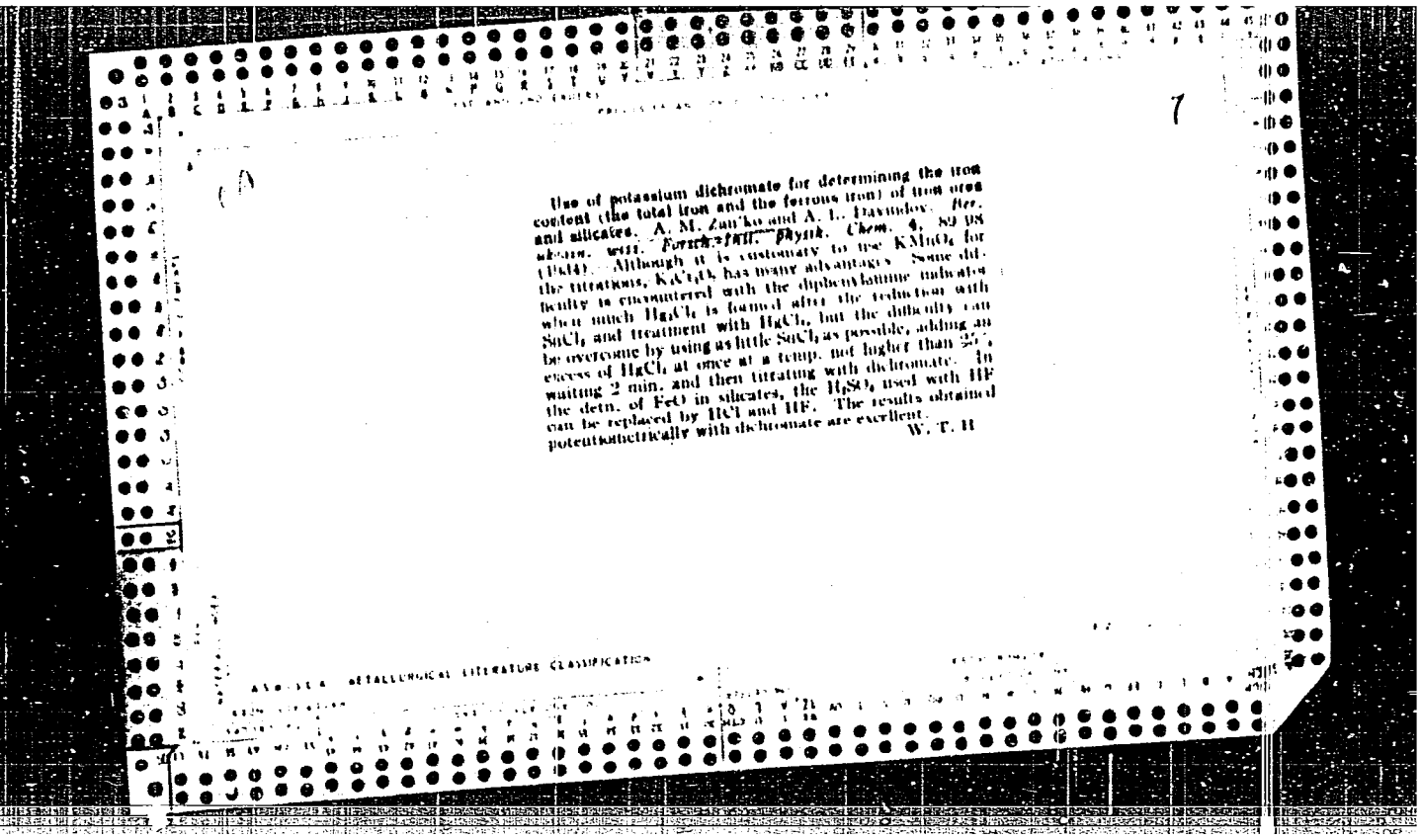

Use of potassium dichromate for determining the iron content (the total iron and the ferrous iron) of iron ores and silicates. A. M. Zan'ko and A. L. Davindov. *Ber. ukrain. wiss. Forsch.-Inst. physik. Chem.* 4, 89-98 (1934).—Although it is customary to use $KMnO_4$ for the titrations, $K_2Cr_2O_7$ has many advantages. Some difficulty is encountered with the diphenylamine indicator when much Hg_2Cl_2 is formed after the reduction with $SnCl_2$ and treatment with $HgCl_2$, but the difficulty can be overcome by using as little $SnCl_2$ as possible, adding an excess of $HgCl_2$ at once at a temp. not higher than 25°, waiting 2 min. and then titrating with dichromate. In the detn. of FeO in silicates, the H_2SO_4 used with HF can be replaced by HCl and HF. The results obtained potentiometrically with dichromate are excellent.

W. T. H.

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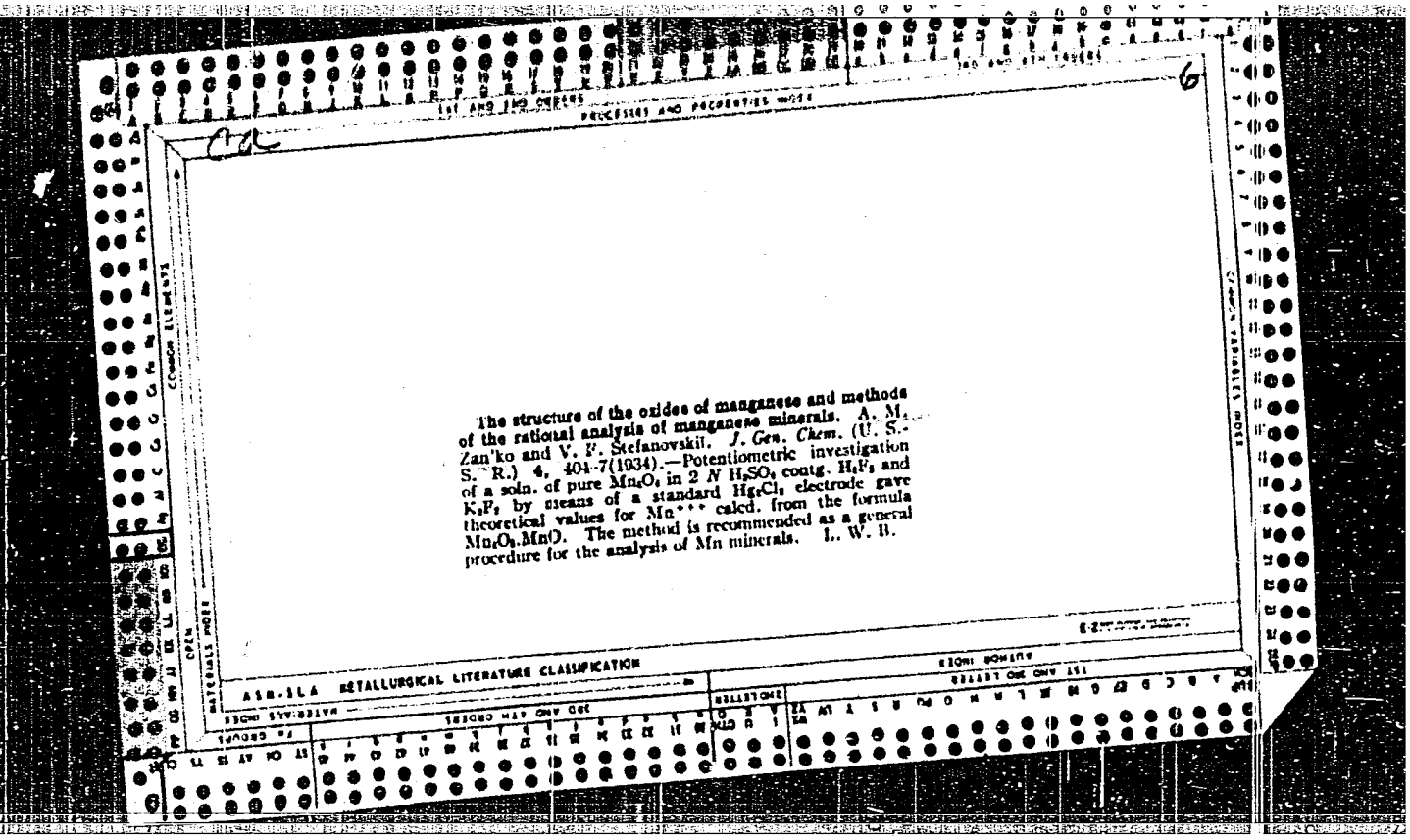

The structure of the oxides of manganese and methods of the rational analysis of manganese minerals. A. M. Zan'ko and V. F. Stefanovskii. *J. Gen. Chem.* (U. S. S. R.) 4, 404-7(1934).—Potentiometric investigation of a soln. of pure Mn_3O_4 in 2 *N* H_2SO_4 contg. H_4P_2 and K_4P_2 by means of a standard Hg_2Cl_2 electrode gave theoretical values for Mn^{+++} calcd. from the formula $Mn_2O_3.MnO$. The method is recommended as a general procedure for the analysis of Mn minerals. L. W. B.

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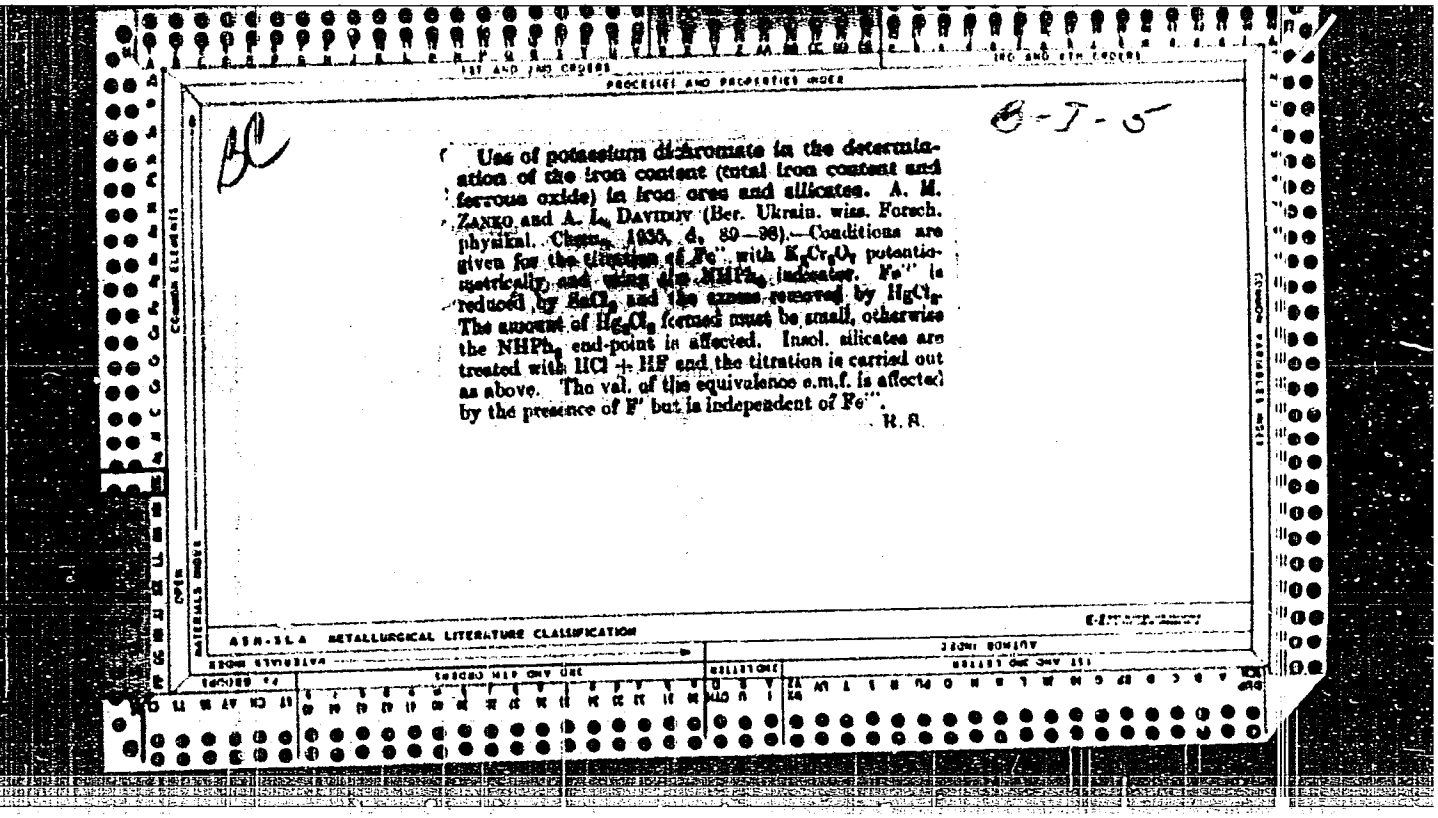

PROCESSES AND PROPERTIES INDEX

BC

6-J-5

Uses of potassium dichromate in the determination of the iron content (total iron content and ferrous oxide) in iron ores and silicates. A. M. ZANKO and A. L. DAVIDIV (Ber. Ukrain. wiss. Forsch. physikal. Chem., 1935, 4, 89—96).—Conditions are given for the titration of Fe'' with $K_2Cr_2O_7$ potentiometrically, and using diphenylamine indicator. Fe''' is reduced by $SnCl_2$ and the excess removed by $HgCl_2$. The amount of Hg_2Cl_2 formed must be small, otherwise the $NHPh_2$ end-point is affected. Insol. silicates are treated with HCl + HF and the titration is carried out as above. The val. of the equivalence e.m.f. is affected by the presence of F' but is independent of Fe'''.

R. B.

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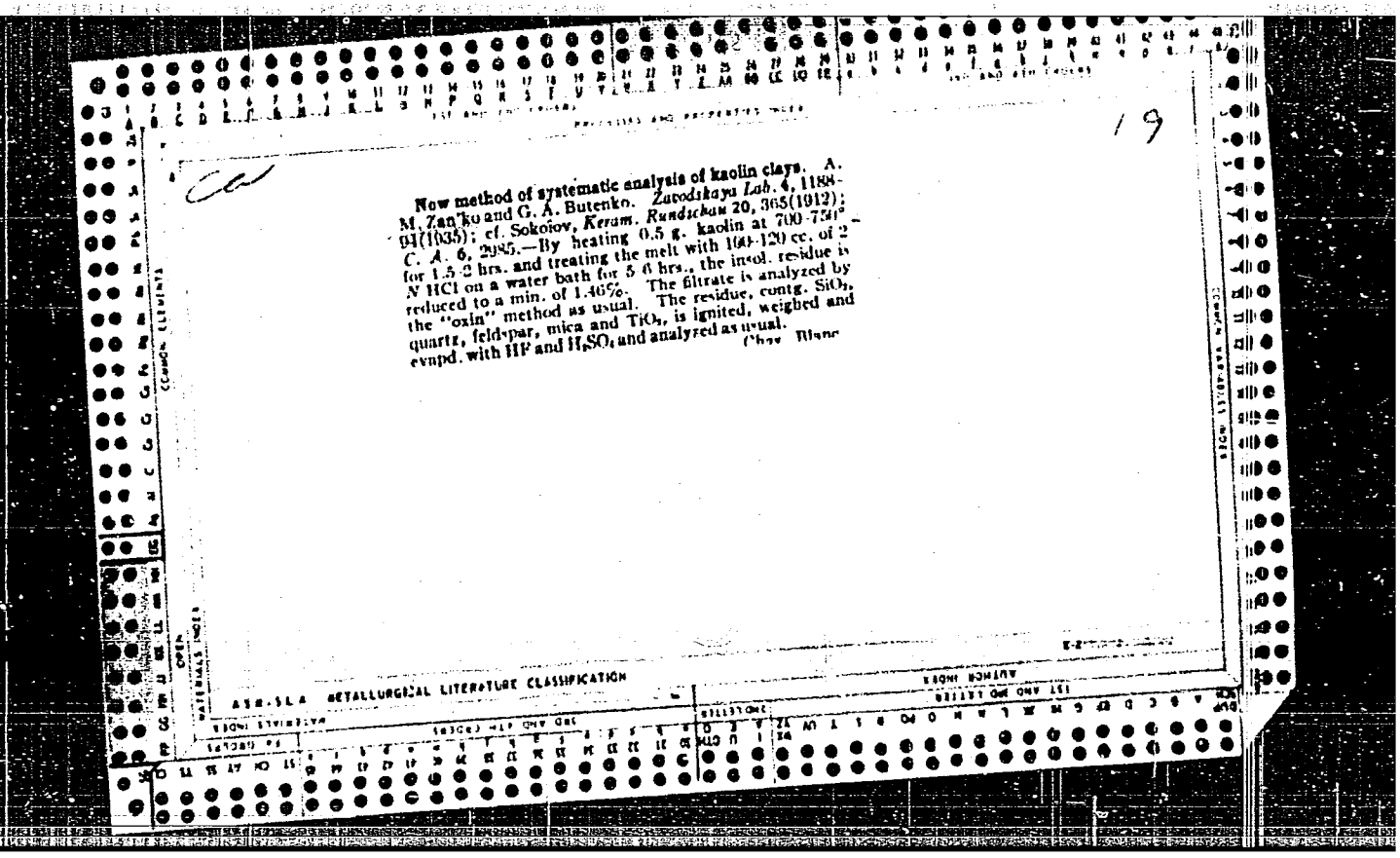

New method of systematic analysis of kaolin clays. A. M. Zan'ko and G. A. Butenko. *Zavodskaya Lab.* 4, 1188-91(1935); cf. Sokolov, *Keram. Rundschau* 20, 365(1912); *C. A.* 6, 2985.—By heating 0.5 g. kaolin at 700-750° for 1.5-2 hrs. and treating the melt with 100-120 cc. of 2 *N* HCl on a water bath for 5-6 hrs., the insol. residue is reduced to a min. of 1.46%. The filtrate is analyzed by the "oxin" method as usual. The residue, contg. SiO_2, quartz, feldspar, mica and TiO_2, is ignited, weighed and evapd. with HF and H_2SO_4 and analyzed as usual.

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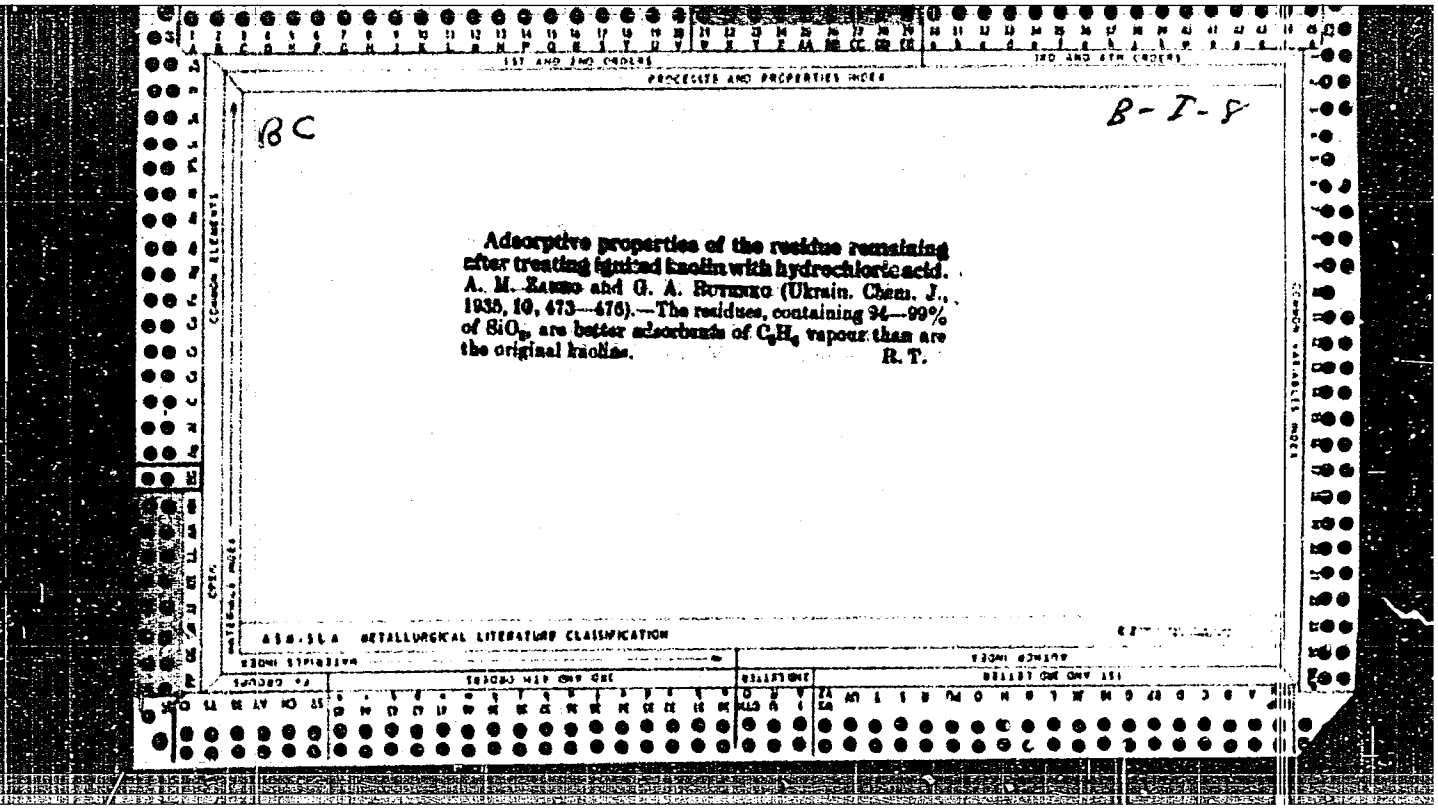
1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX



BC

B-I-8

Adsorptive properties of the residue remaining after treating ignited kaolin with hydrochloric acid. A. M. Zaneo and G. A. Butenko (Ukrain. Chem. J., 1935, 10, 473—476).—The residues, containing 94—99% of SiO_2, are better adsorbents of C_6H_6 vapour than are the original kaolins. R. T.

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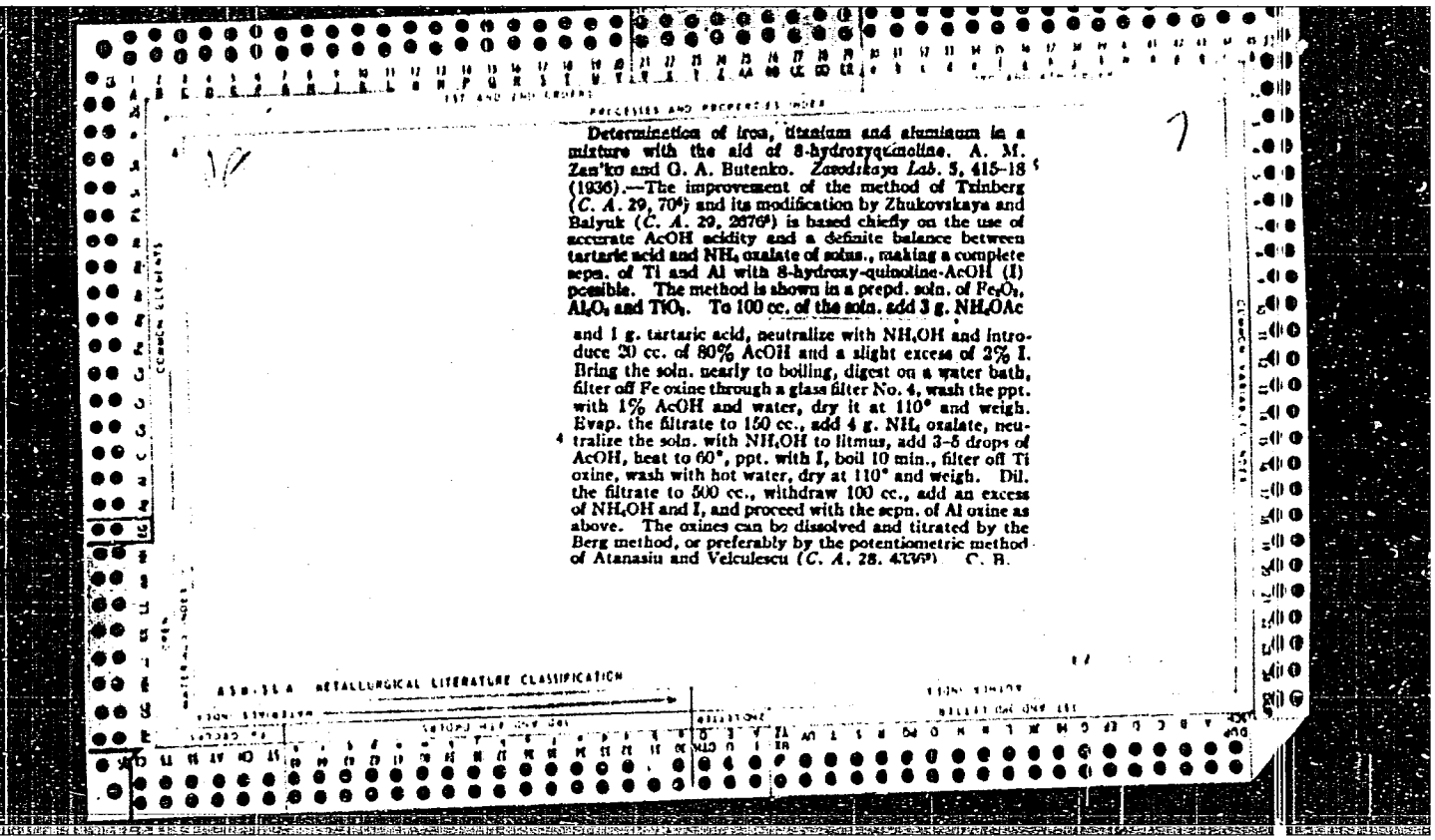

Determination of iron, titanium and aluminum in a mixture with the aid of 8-hydroxyquinoline. A. M. Zas'ko and G. A. Butenko. *Zavodskaya Lab.* 5, 415–18 (1936).—The improvement of the method of Tsinberg (*C. A.* 29, 7046) and its modification by Zhukovskaya and Balyuk (*C. A.* 29, 2676[8]) is based chiefly on the use of accurate AcOH acidity and a definite balance between tartaric acid and NH_4 oxalate of solns., making a complete sepn. of Ti and Al with 8-hydroxy-quinoline-AcOH (I) possible. The method is shown in a prepd. soln. of Fe_2O_3, Al_2O_3 and TiO_2. To 100 cc. of the soln. add 3 g. NH_4OAc and 1 g. tartaric acid, neutralize with NH_4OH and introduce 20 cc. of 80% AcOH and a slight excess of 2% I. Bring the soln. nearly to boiling, digest on a water bath, filter off Fe oxine through a glass filter No. 4, wash the ppt. with 1% AcOH and water, dry it at 110° and weigh. Evap. the filtrate to 150 cc., add 4 g. NH_4 oxalate, neutralize the soln. with NH_4OH to litmus, add 3–5 drops of AcOH, heat to 60°, ppt. with I, boil 10 min., filter off Ti oxine, wash with hot water, dry at 110° and weigh. Dil. the filtrate to 500 cc., withdraw 100 cc., add an excess of NH_4OH and I, and proceed with the sepn. of Al oxine as above. The oxines can be dissolved and titrated by the Berg method, or preferably by the potentiometric method of Atanasiu and Velculescu (*C. A.* 28, 4356[9]). C. B.

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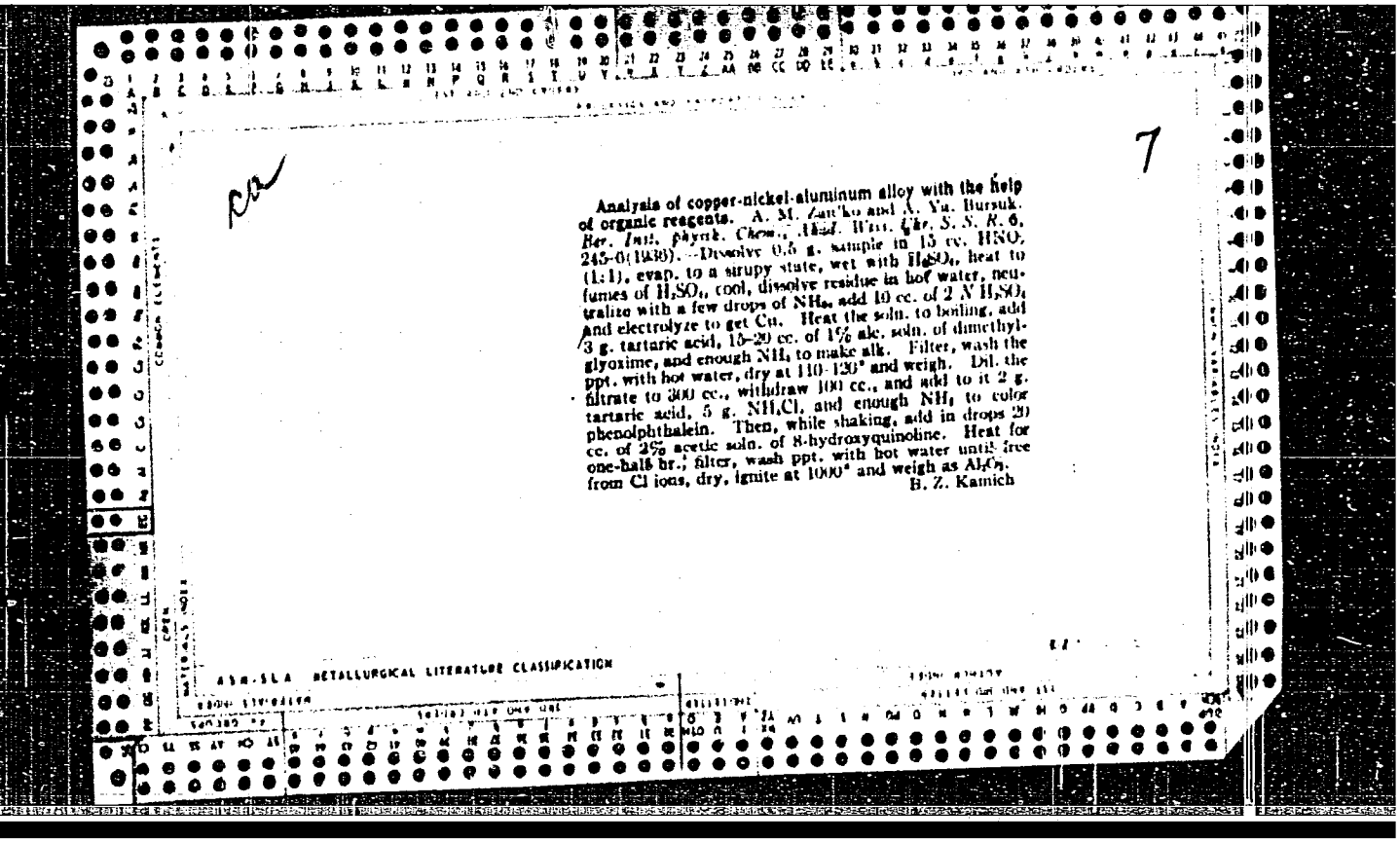

Analysis of copper-nickel-aluminum alloy with the help of organic reagents. A. M. Zan'ko and A. Ya. Bursuk. *Ber. Inst. physik. Chem., Akad. Wiss. Ukr. S. S. R.* 6, 245-6(1938). --Dissolve 0.5 g. sample in 15 cc. HNO_3 (1:1), evap. to a syrupy state, wet with H_2SO_4, heat to fumes of H_2SO_4, cool, dissolve residue in hot water, neutralize with a few drops of NH_4, add 10 cc. of 2 *N* H_2SO_4 and electrolyze to get Cu. Heat the soln. to boiling, add 3 g. tartaric acid, 15-20 cc. of 1% alc. soln. of dimethylglyoxime, and enough NH_4 to make alk. Filter, wash the ppt. with hot water, dry at 110-120° and weigh. Dil. the filtrate to 300 cc., withdraw 100 cc., and add to it 2 g. tartaric acid, 5 g. NH_4Cl, and enough NH_4 to color phenolphthalein. Then, while shaking, add in drops 20 cc. of 2% acetic soln. of 8-hydroxyquinoline. Heat for one-half hr., filter, wash ppt. with hot water until free from Cl ions, dry, ignite at 1000° and weigh as Al_2O_3.

B. Z. Kamich

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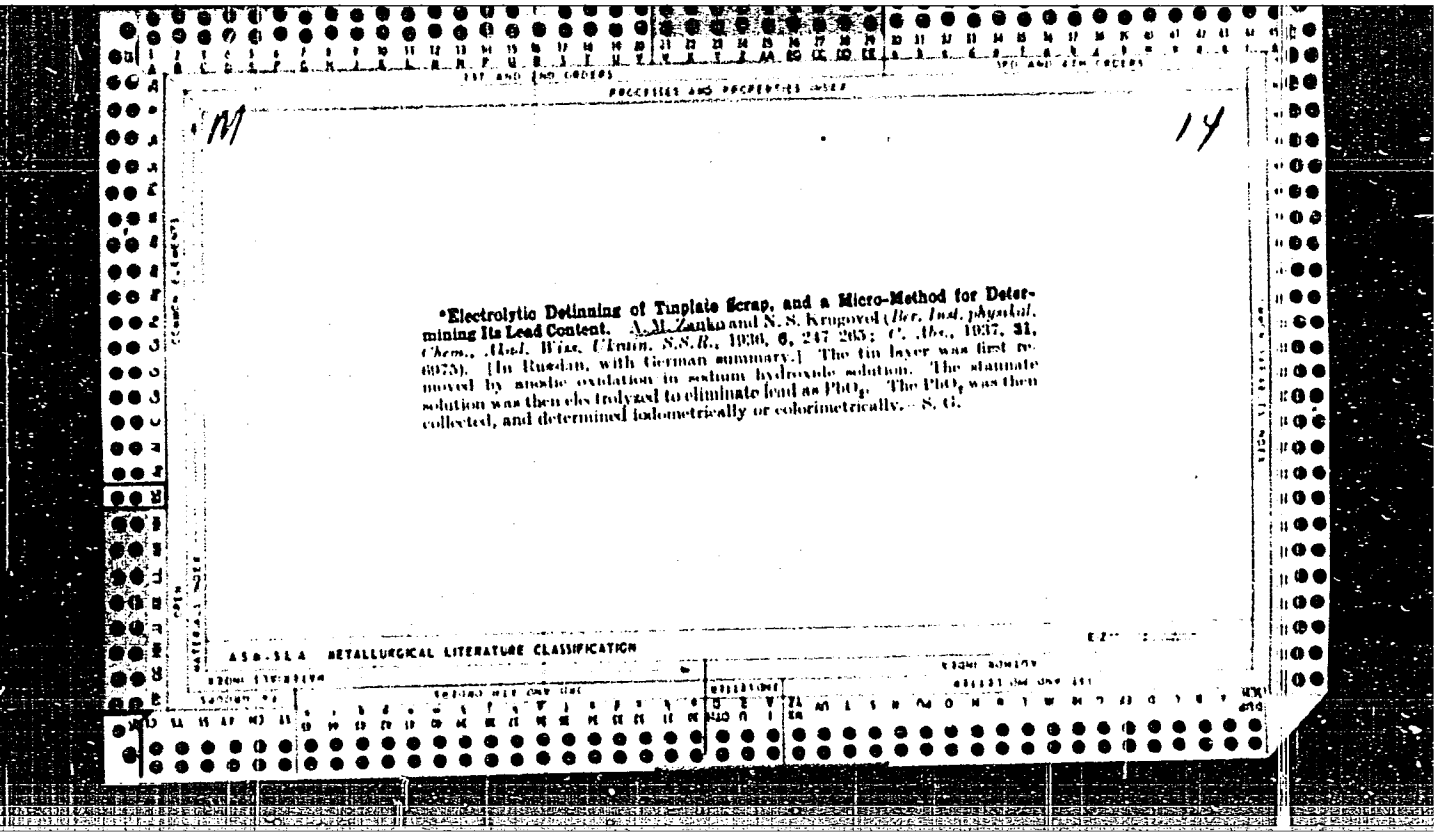

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Electrolytic Detinning of Tinplate Scrap, and a Micro-Method for Determining Its Lead Content. A. M. Zanko and N. S. Krugovoi (*Zav. Lab., physikal. Chem., Akad. Wiss. Ukrain. S.S.R.*, 1936, **6**, 247–265; *C. Abs.*, 1937, **31**, 6975). [In Russian, with German summary.] The tin layer was first removed by anodic oxidation in sodium hydroxide solution. The stannate solution was then electrolyzed to eliminate lead as PbO_2. The PbO_2 was then collected, and determined iodometrically or colorimetrically.—S. G.

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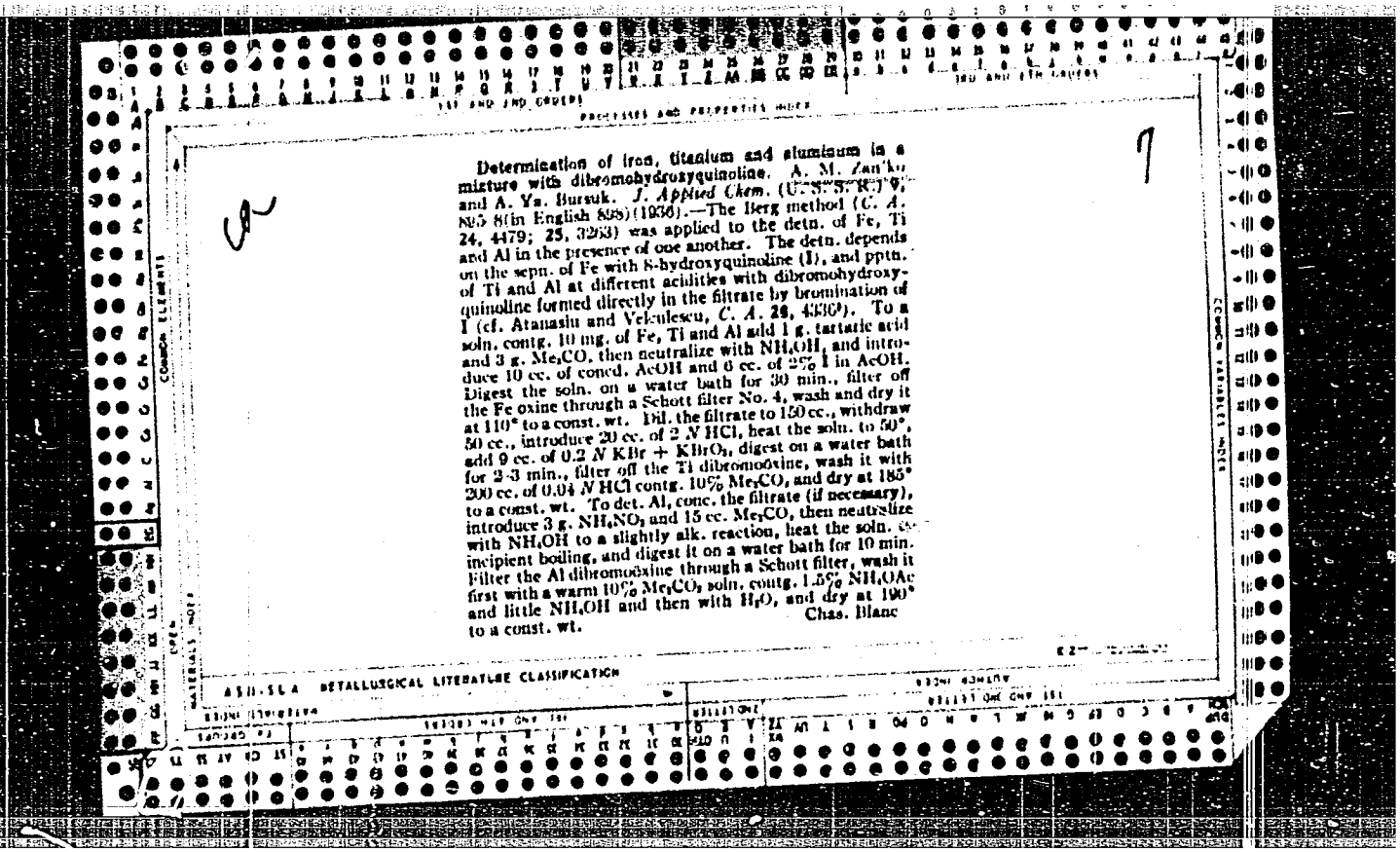

Determination of iron, titanium and aluminum in a mixture with dibromohydroxyquinoline. A. M. Zan'ko and A. Ya. Bursuk. *J. Applied Chem.* (U.S.S.R.) 9, No. 5 8(in English 8pp)(1936).—The Berg method (*C. A.* 24, 4479; 25, 3263) was applied to the detn. of Fe, Ti and Al in the presence of one another. The detn. depends on the sepn. of Fe with 8-hydroxyquinoline (I), and pptn. of Ti and Al at different acidities with dibromohydroxyquinoline formed directly in the filtrate by bromination of I (cf. Atanasiu and Vekulescu, *C. A.* 28, 4330[9]). To a soln. contg. 10 mg. of Fe, Ti and Al add 1 g. tartaric acid and 3 g. Me_2CO, then neutralize with NH_4OH, and introduce 10 cc. of concd. AcOH and 6 cc. of 2% I in AcOH. Digest the soln. on a water bath for 30 min., filter off the Fe oxine through a Schott filter No. 4, wash and dry it at 110° to a const. wt. Dil. the filtrate to 150 cc., withdraw 50 cc., introduce 20 cc. of 2 *N* HCl, heat the soln. to 50°, add 9 cc. of 0.2 *N* KBr + $KBrO_3$, digest on a water bath for 2-3 min., filter off the Ti dibromooxine, wash it with 200 cc. of 0.04 *N* HCl contg. 10% Me_2CO, and dry at 185° to a const. wt. To det. Al, conc. the filtrate (if necessary), introduce 3 g. NH_4NO_3 and 15 cc. Me_2CO, then neutralize with NH_4OH to a slightly alk. reaction, heat the soln. to incipient boiling, and digest it on a water bath for 10 min. Filter the Al dibromooxine through a Schott filter, wash it first with a warm 10% Me_2CO soln. contg. 1.5% NH_4OAc and little NH_4OH and then with H_2O, and dry at 190° to a const. wt.

Chas. Blanc

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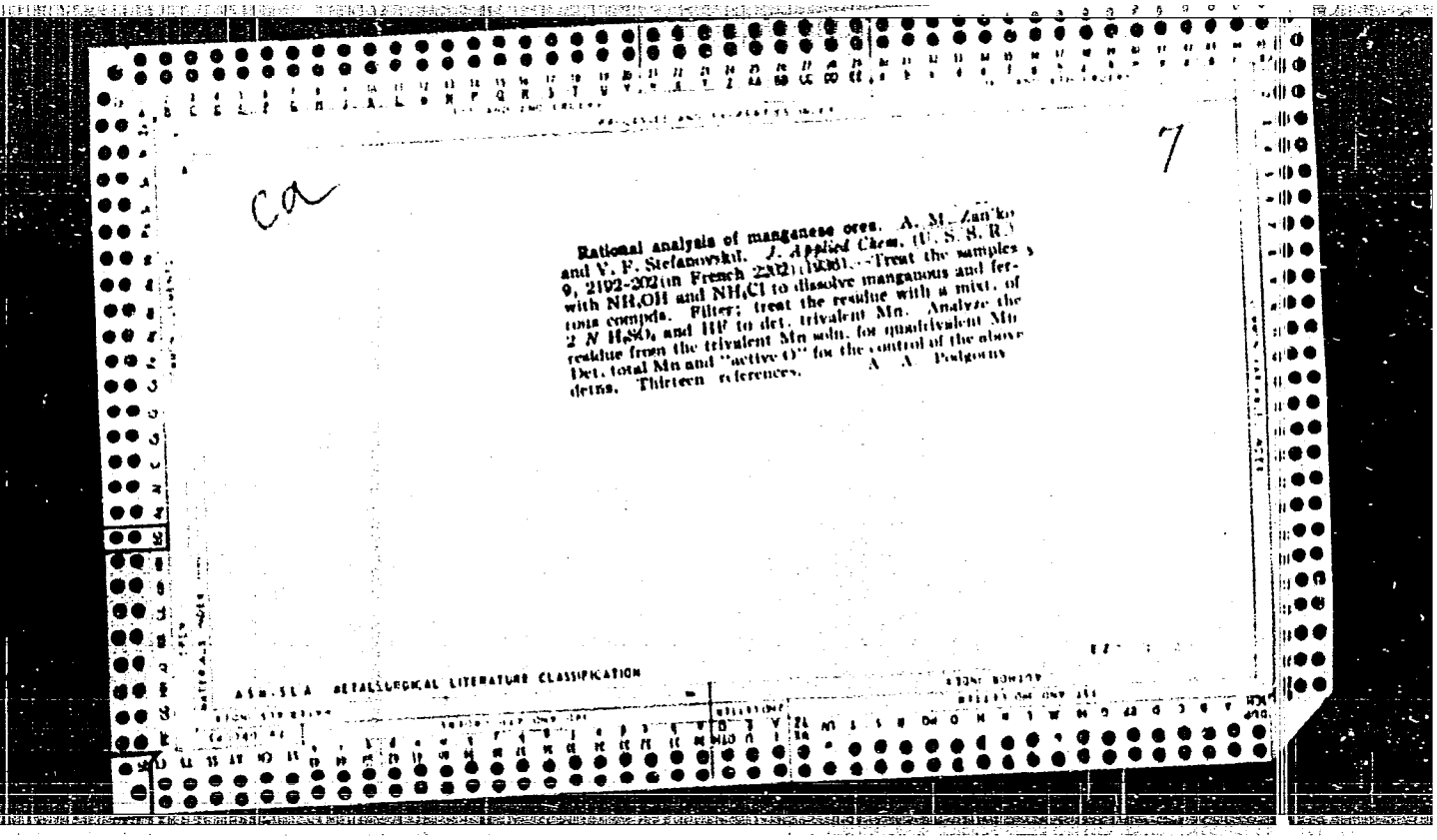

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Rational analysis of manganese ores. A. M. Zan'ko and V. F. Stefanovskii. *J. Applied Chem.* (U. S. S. R.) 9, 2192-202(in French 2202)(1936).—Treat the samples with NH_4OH and NH_4Cl to dissolve manganous and ferrous compds. Filter; treat the residue with a mixt. of 2 *N* H_2SO_4 and HF to det. trivalent Mn. Analyze the residue from the trivalent Mn soln. for quadrivalent Mn. Det. total Mn and "active O" for the control of the above detns. Thirteen references. A. A. Podgorny

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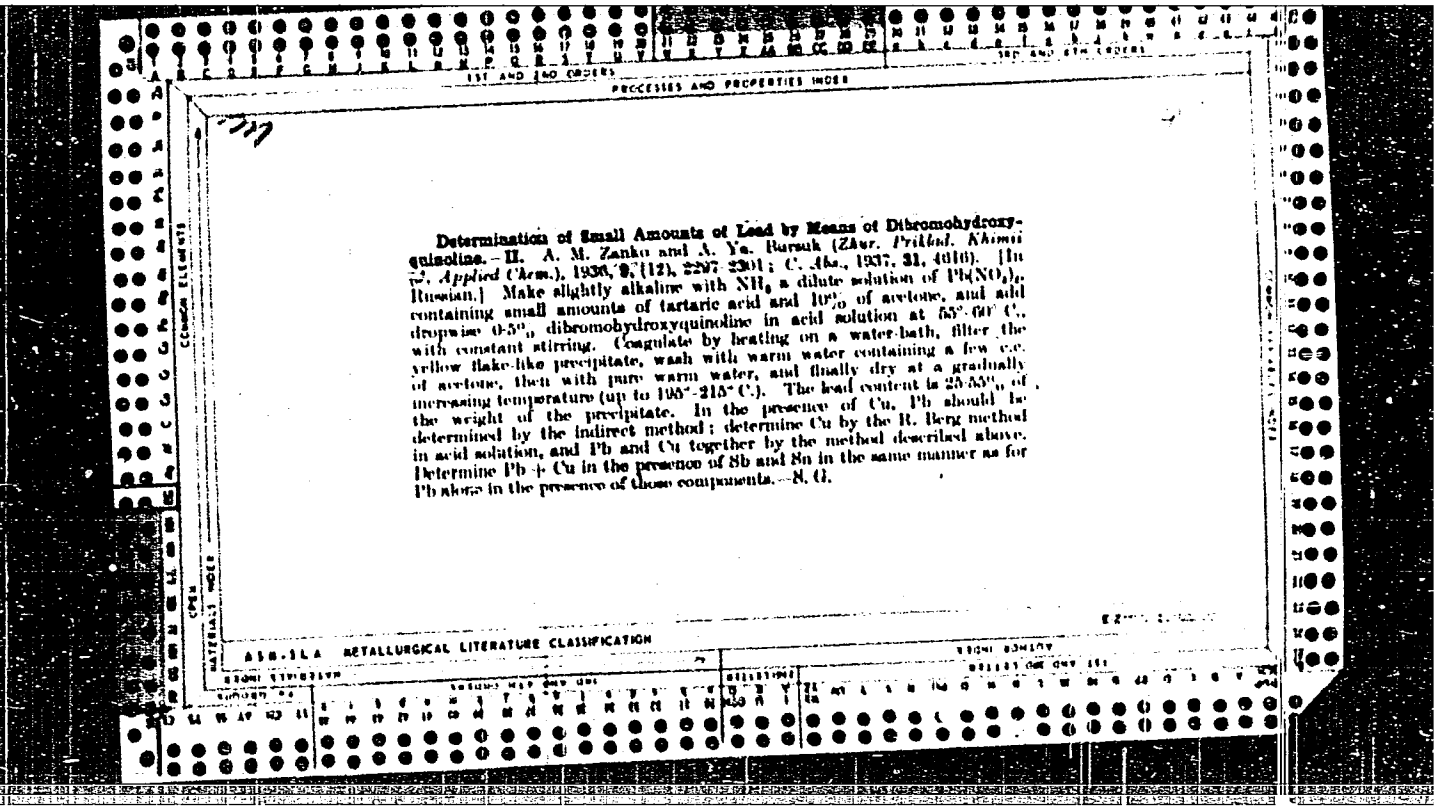

Determination of Small Amounts of Lead by Means of Dibromohydroxyquinoline.—II. A. M. Zanko and A. Ya. Barsuk (*Zhur. Prikhd. Khimii* [*J. Applied Chem.*], 1936, **9**, (12), 2297–2301; *C. Abs.*, 1937, **31**, 4016). [In Russian.] Make slightly alkaline with NH_3 a dilute solution of $Pb(NO_3)_2$ containing small amounts of tartaric acid and 10% of acetone, and add dropwise 0·5% dibromohydroxyquinoline in acid solution at 55°–60° C., with constant stirring. Coagulate by heating on a water-bath, filter the yellow flake-like precipitate, wash with warm water containing a few c.c. of acetone, then with pure warm water, and finally dry at a gradually increasing temperature (up to 195°–215° C.). The lead content is 25·55% of the weight of the precipitate. In the presence of Cu, Pb should be determined by the indirect method; determine Cu by the R. Berg method in acid solution, and Pb and Cu together by the method described above. Determine Pb + Cu in the presence of Sb and Sn in the same manner as for Pb alone in the presence of those components.—S. G.

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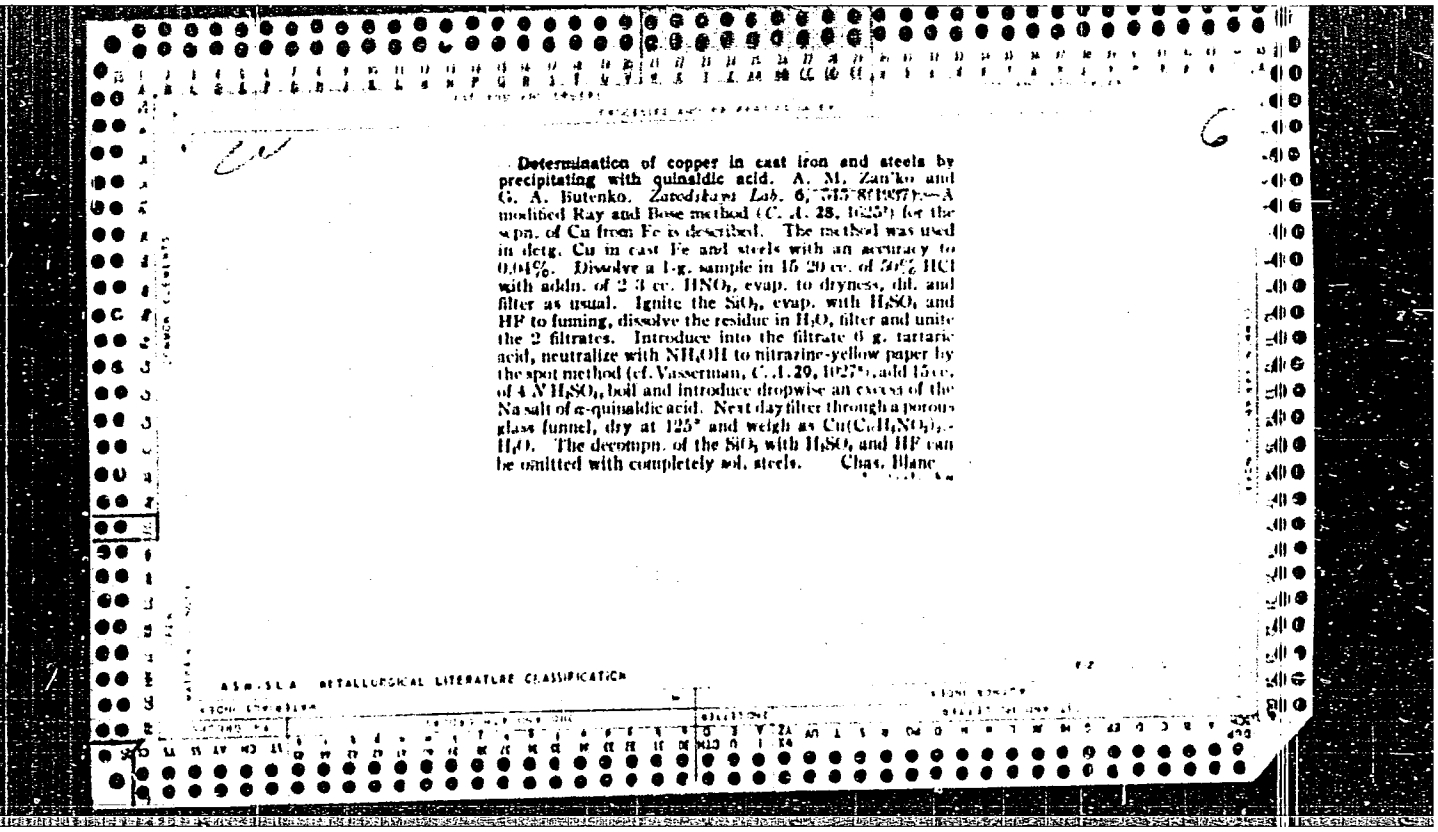

Determination of copper in cast iron and steels by precipitating with quinaldic acid. A. M. Zan'ko and G. A. Butenko. *Zavodskaya Lab.* 6, 715-8(1937).—A modified Ray and Bose method (*C. A.* **28**, 1625[5]) for the sepn. of Cu from Fe is described. The method was used in detg. Cu in cast Fe and steels with an accuracy to 0.04%. Dissolve a 1-g. sample in 15-20 cc. of 50% HCl with addn. of 2-3 cc. HNO_3, evap. to dryness, dil. and filter as usual. Ignite the SiO_2, evap. with H_2SO_4 and HF to fuming, dissolve the residue in H_2O, filter and unite the 2 filtrates. Introduce into the filtrate 6 g. tartaric acid, neutralize with NH_4OH to nitrazine-yellow paper by the spot method (cf. Vasserman, *C. A.* **29**, 1027[7]), add 15 cc. of 4 *N* H_2SO_4, boil and introduce dropwise an excess of the Na salt of α-quinaldic acid. Next day filter through a porous glass funnel, dry at 125° and weigh as $Cu(C_9H_6NO_2)_2 \cdot H_2O$. The decompn. of the SiO_2 with H_2SO_4 and HF can be omitted with completely sol. steels. Chas. Blanc

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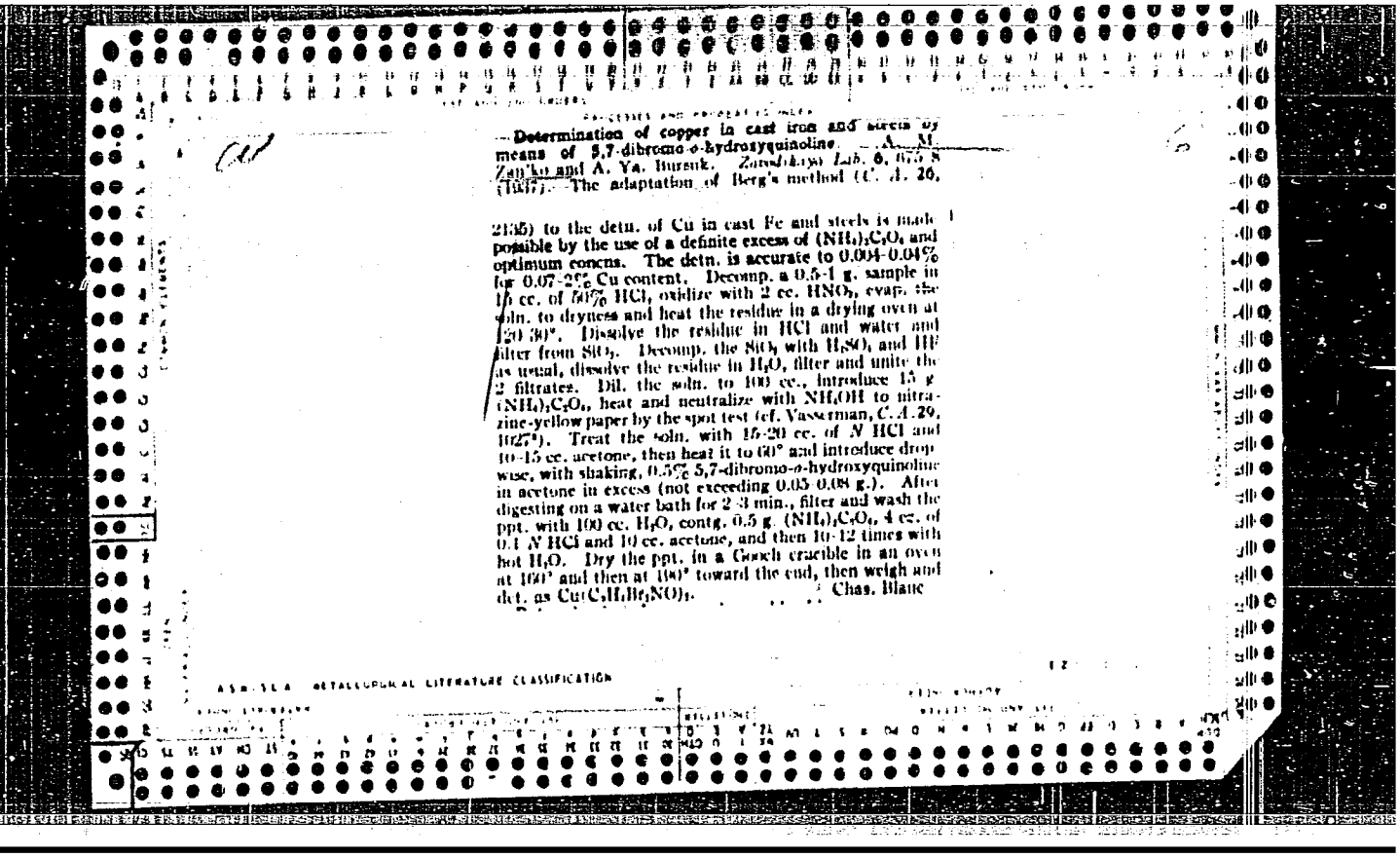
PROCESSES AND PROPERTIES INDEX



Determination of copper in cast iron and steels by means of 5,7-dibromo-o-hydroxyquinoline. A. M. Zan'ko and A. Ya. Bursuk. *Zavodskaya Lab.* 6, 675-8 (1937). The adaptation of Berg's method (*C. A.* 26, 2135) to the detn. of Cu in cast Fe and steels is made possible by the use of a definite excess of $(NH_4)_2C_2O_4$ and optimum concns. The detn. is accurate to 0.004-0.04% for 0.07-2% Cu content. Decomp. a 0.5-1 g. sample in 15 cc. of 50% HCl, oxidize with 2 cc. HNO_3, evap. the soln. to dryness and heat the residue in a drying oven at 120-30°. Dissolve the residue in HCl and water and filter from SiO_2. Decomp. the SiO_2 with H_2SO_4 and HF as usual, dissolve the residue in H_2O, filter and unite the 2 filtrates. Dil. the soln. to 100 cc., introduce 15 g. $(NH_4)_2C_2O_4$, heat and neutralize with NH_4OH to nitrazine-yellow paper by the spot test (cf. Vasserman, *C. A.* 29, 1027[8]). Treat the soln. with 15-20 cc. of *N* HCl and 10-15 cc. acetone, then heat it to 60° and introduce dropwise, with shaking, 0.5% 5,7-dibromo-o-hydroxyquinoline in acetone in excess (not exceeding 0.05-0.08 g.). After digesting on a water bath for 2-3 min., filter and wash the ppt. with 100 cc. H_2O, contg. 0.5 g. $(NH_4)_2C_2O_4$, 4 cc. of 0.1 *N* HCl and 10 cc. acetone, and then 10-12 times with hot H_2O. Dry the ppt. in a Gooch crucible in an oven at 160° and then at 190° toward the end, then weigh and det. as $Cu(C_9H_4Br_2NO)_2$. Chas. Blanc

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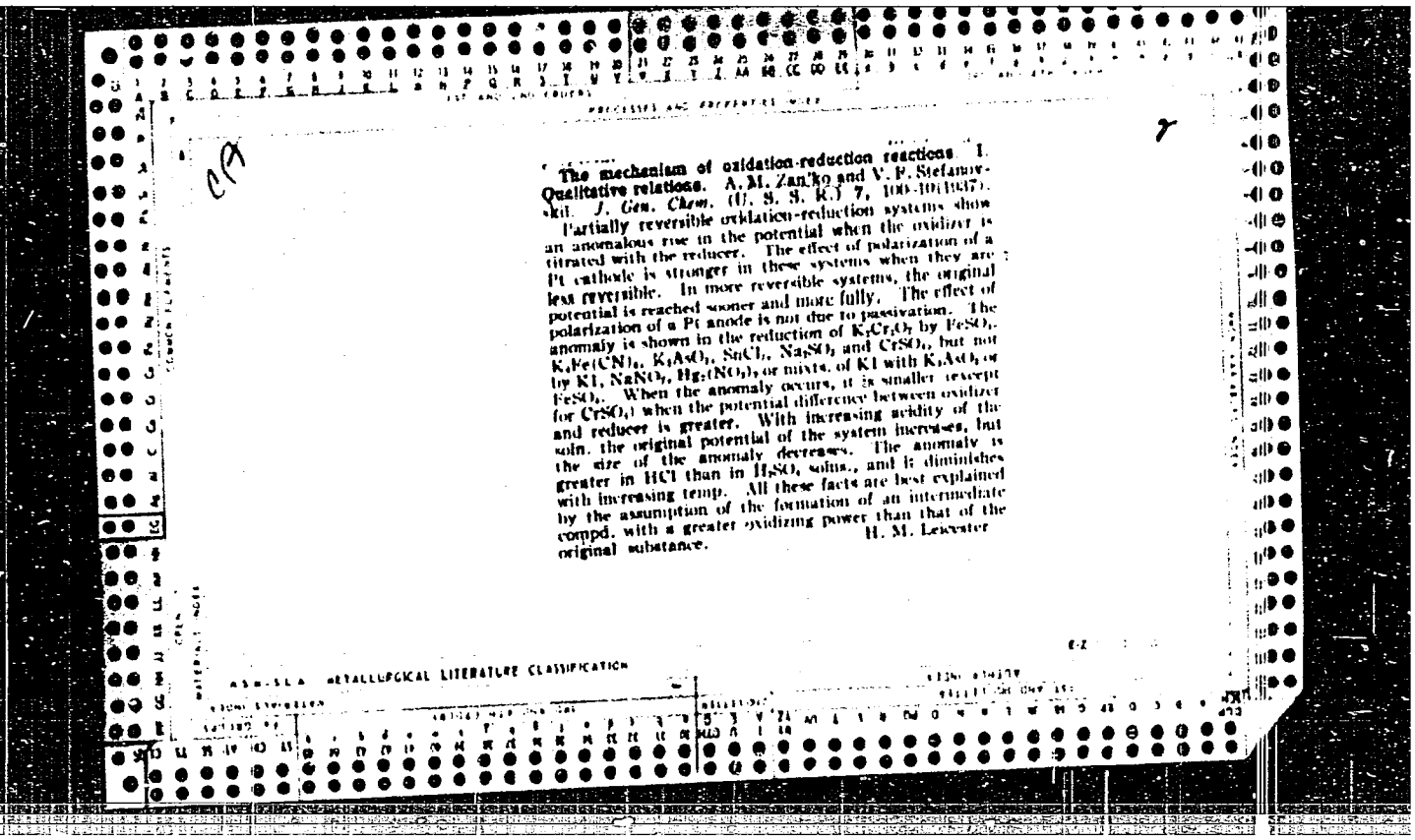

The mechanism of oxidation-reduction reactions. I. Qualitative relations. A. M. Zan'ko and V. F. Stefanovskii. *J. Gen. Chem.* (U. S. S. R.) 7, 100-10(1937).

Partially reversible oxidation-reduction systems show an anomalous rise in the potential when the oxidizer is titrated with the reducer. The effect of polarization of a Pt cathode is stronger in these systems when they are less reversible. In more reversible systems, the original potential is reached sooner and more fully. The effect of polarization of a Pt anode is not due to passivation. The anomaly is shown in the reduction of $K_2Cr_2O_7$ by $FeSO_4$, $K_4Fe(CN)_6$, K_3AsO_3, $SnCl_2$, Na_2SO_3 and $CrSO_4$, but not by KI, $NaNO_2$, $Hg_2(NO_3)_2$, or mixts. of KI with K_3AsO_3 or $FeSO_4$. When the anomaly occurs, it is smaller (except for $CrSO_4$) when the potential difference between oxidizer and reducer is greater. With increasing acidity of the soln. the original potential of the system increases, but the size of the anomaly decreases. The anomaly is greater in HCl than in H_2SO_4 solns., and it diminishes with increasing temp. All these facts are best explained by the assumption of the formation of an intermediate compd. with a greater oxidizing power than that of the original substance.

H. M. Leicester

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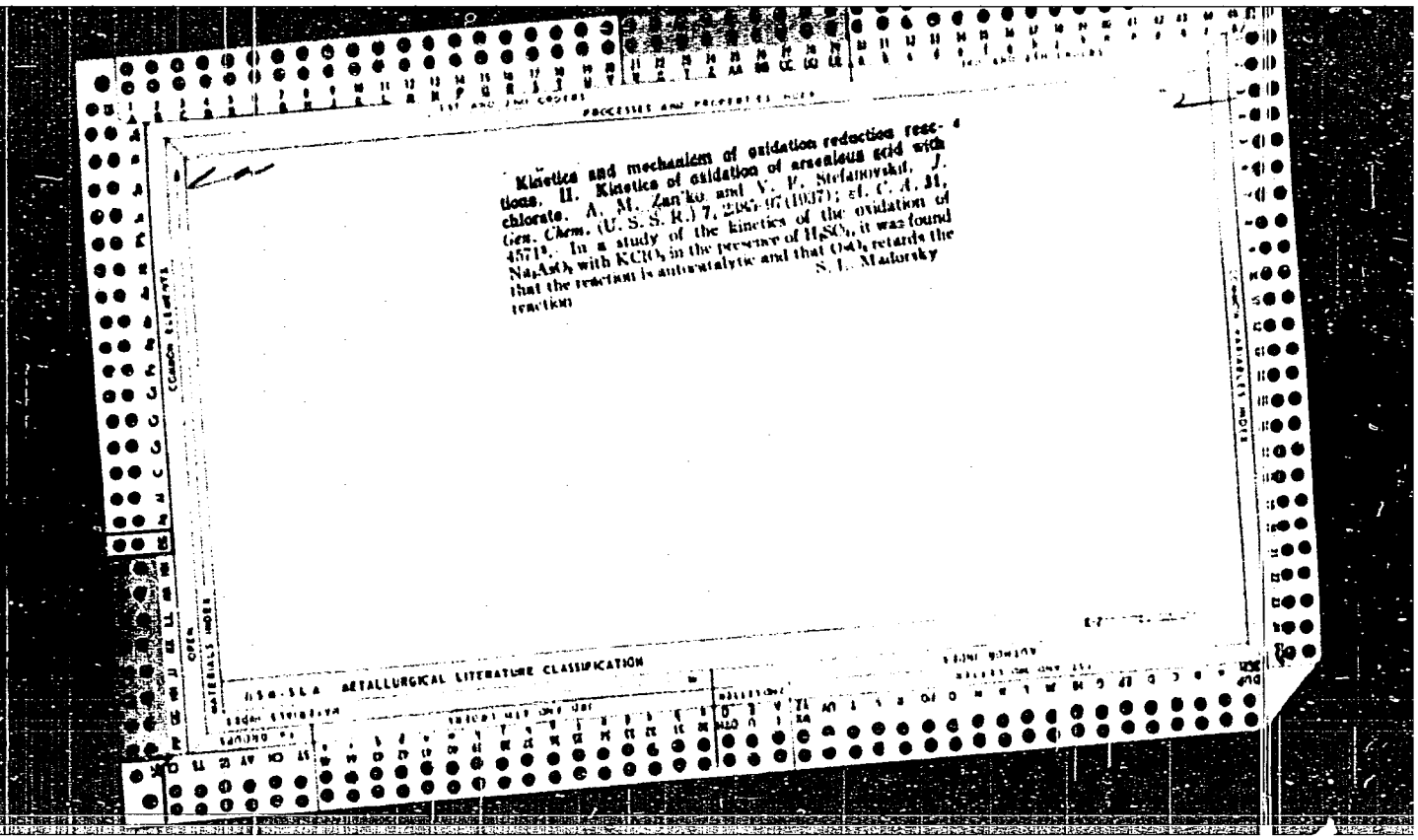

Kinetics and mechanism of oxidation reduction reactions. II. Kinetics of oxidation of arsenious acid with chlorate. A. M. Zan'ko and V. P. Stefanovskii. *J. Gen. Chem.* (U. S. S. R.) 7, 2265-97 (1937); cf. *C. A.* 31, 45719. In a study of the kinetics of the oxidation of Na_3AsO_3 with $KClO_3$ in the presence of H_2SO_4, it was found that the reaction is autocatalytic and that $(NH_4)_2SO_4$ retards the reaction.

S. L. Madorsky

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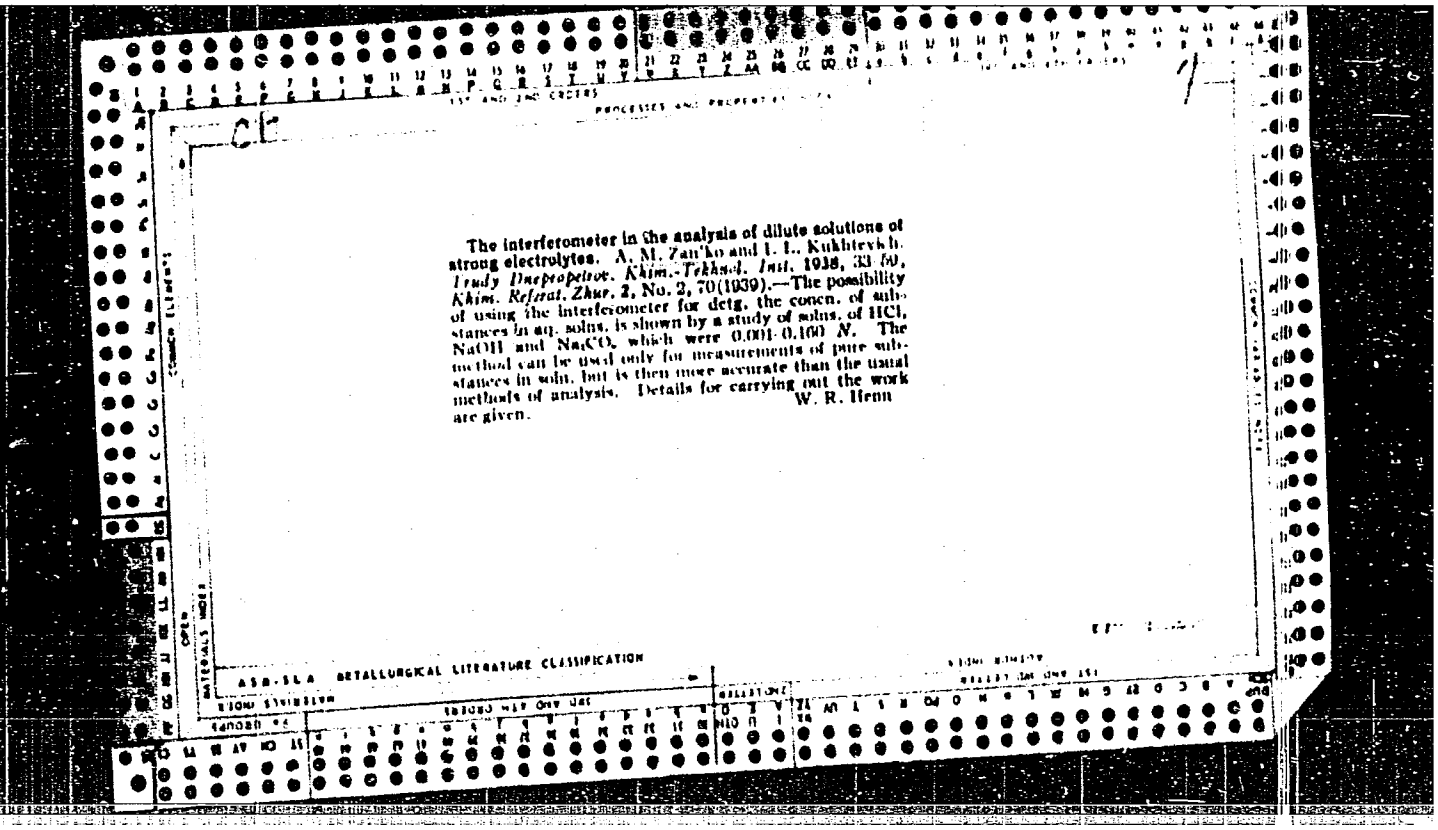

The interferometer in the analysis of dilute solutions of strong electrolytes. A. M. Zan'ko and I. L. Kukhtevich. *Trudy Dnepropetrov. Khim.-Tekhnol. Inst.* 1938, 33 60; *Khim. Referat. Zhur.* 2, No. 2, 70(1939).—The possibility of using the interferometer for detg. the concn. of substances in aq. solns. is shown by a study of solns. of HCl, NaOH and Na_2CO_3 which were 0.001–0.100 *N*. The method can be used only for measurements of pure substances in soln. but is then more accurate than the usual methods of analysis. Details for carrying out the work are given.

W. R. Henn

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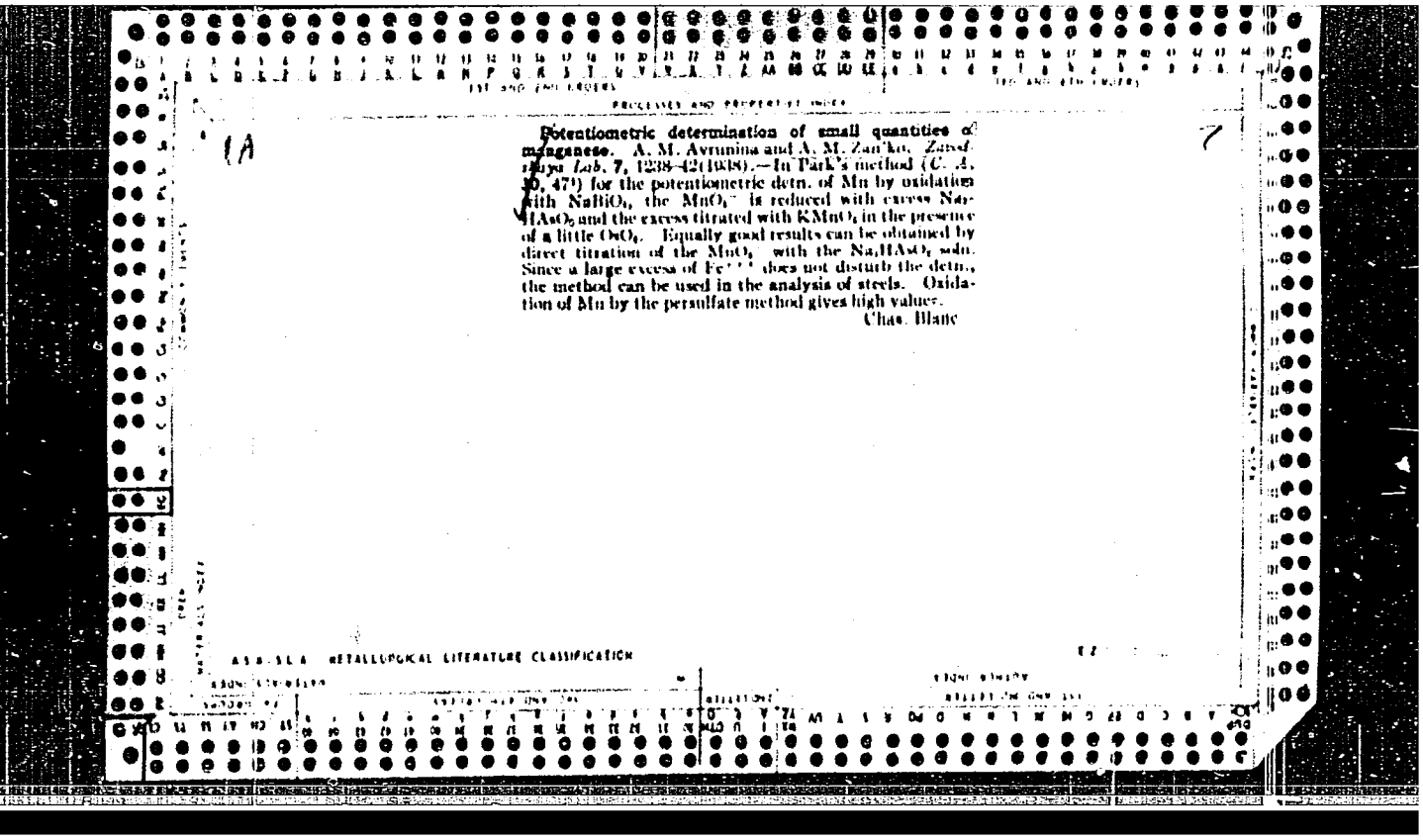

Potentiometric determination of small quantities of manganese. A. M. Avrunina and A. M. Zan'ko. *Zavod. Lab.* **7**, 1238–42(1938).—In Park's method (*C. A.* **30**, 479) for the potentiometric detn. of Mn by oxidation with $NaBiO_3$, the MnO_4^- is reduced with excess Na_2HAsO_3 and the excess titrated with $KMnO_4$ in the presence of a little OsO_4. Equally good results can be obtained by direct titration of the MnO_4^- with the Na_2HAsO_3 soln. Since a large excess of Fe^{+++} does not disturb the detn., the method can be used in the analysis of steels. Oxidation of Mn by the persulfate method gives high values.
Chas. Blanc

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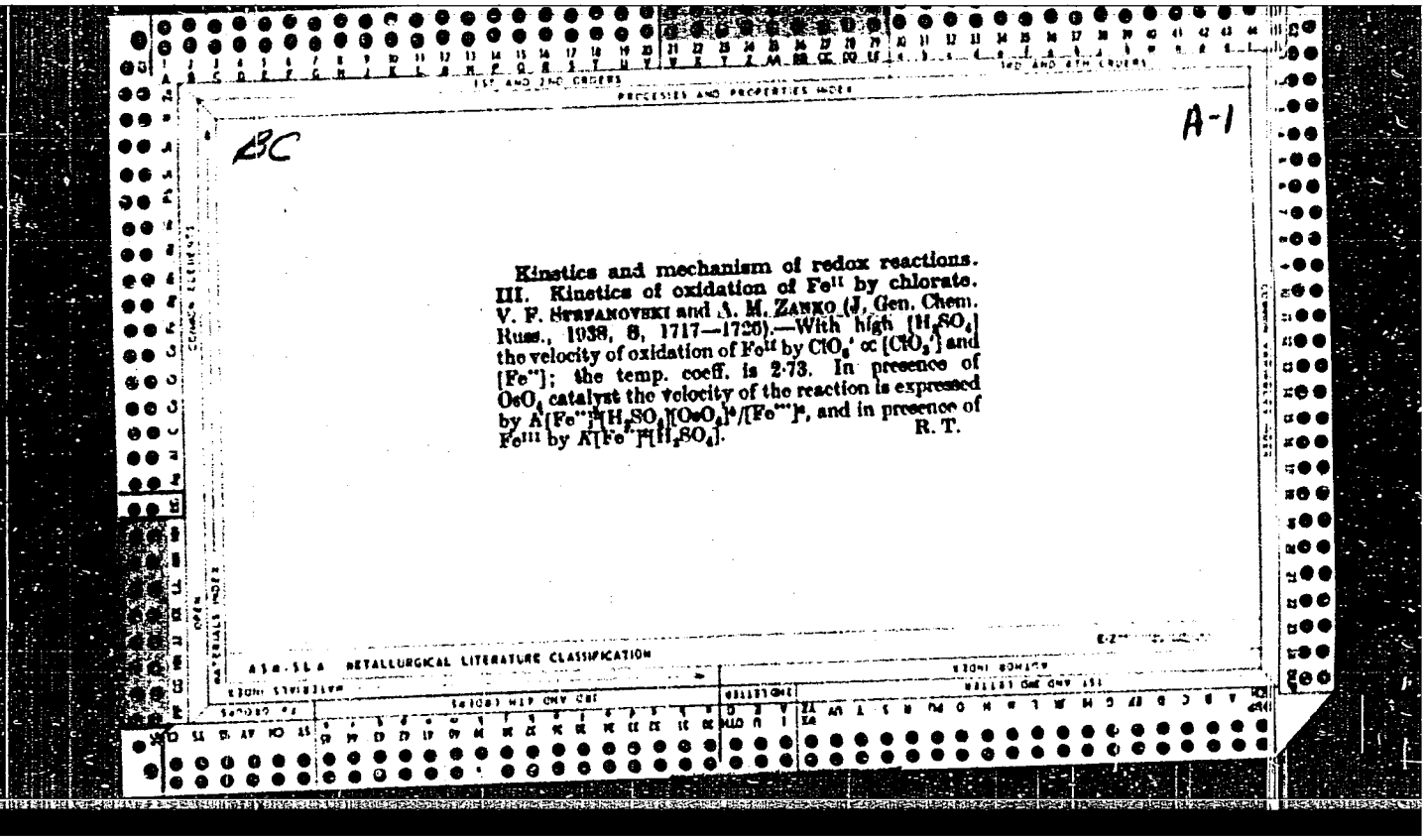

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

A-1

Kinetics and mechanism of redox reactions. III. Kinetics of oxidation of Fe^{II} by chlorate. V. F. STEFANOVSKI and A. M. ZANKO (J. Gen. Chem. Russ., 1938, 8, 1717—1726).—With high $[H_2SO_4]$ the velocity of oxidation of Fe^{II} by ClO_3' ∝ $[ClO_3']$ and $[Fe^{\cdot\cdot}]$; the temp. coeff. is 2·73. In presence of OsO_4 catalyst the velocity of the reaction is expressed by $A[Fe^{\cdot\cdot}]^2[H_2SO_4][OsO_4]^4/[Fe^{\cdot\cdot\cdot}]^2$, and in presence of Fe^{III} by $A[Fe^{\cdot\cdot}]^2[H_2SO_4]$. R. T.

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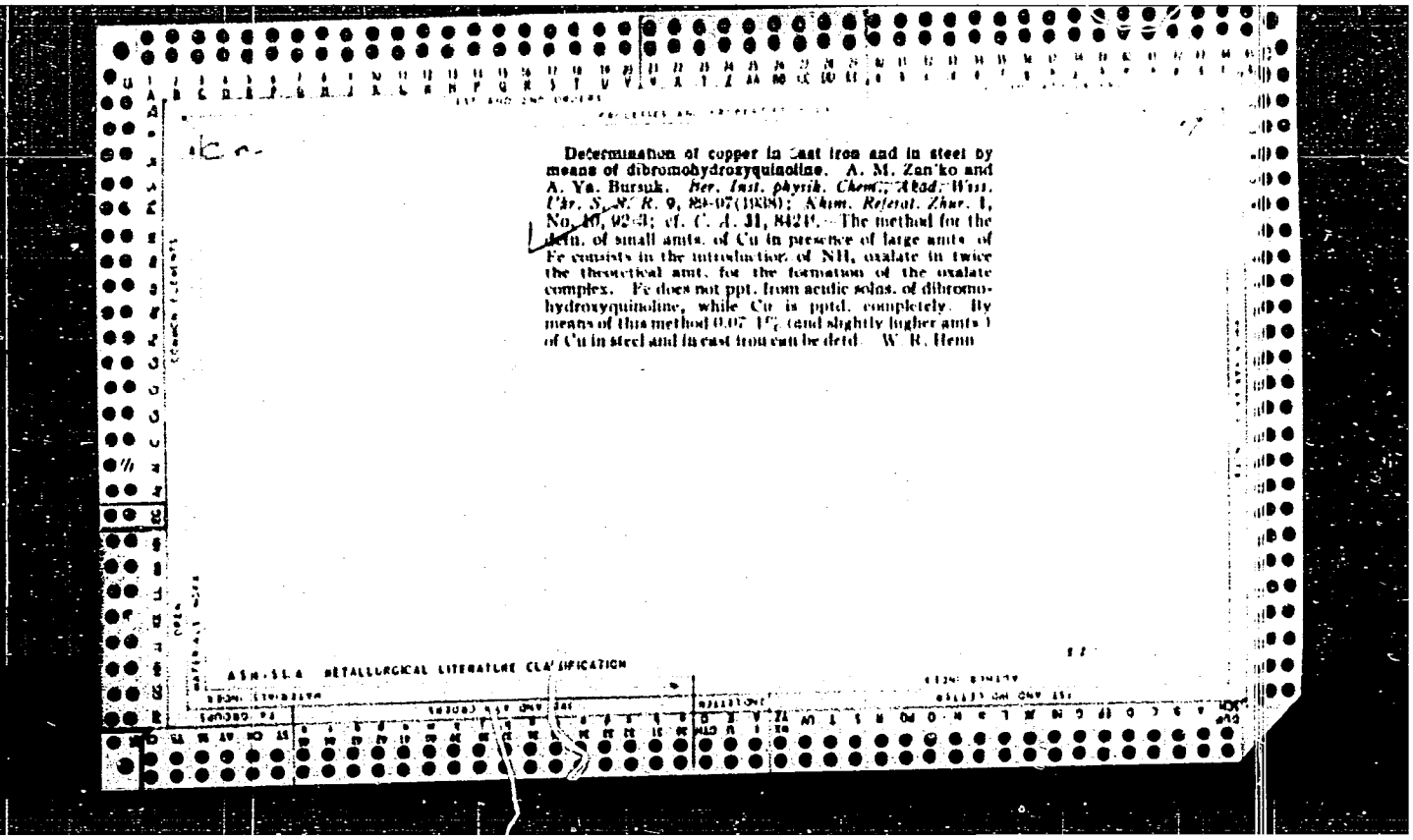

Determination of copper in cast iron and in steel by means of dibromohydroxyquinoline. A. M. Zan'ko and A. Ya. Bursuk. *Ber. Inst. physik. Chem. Akad. Wiss. Ukr. S.S.R.* 9, 89-97 (1938); *Khim. Referat. Zhur.* 1, No. 10, 92-3; cf. *C. A.* 31, 8424.—The method for the detn. of small amts. of Cu in presence of large amts. of Fe consists in the introduction of NH$_4$ oxalate in twice the theoretical amt. for the formation of the oxalate complex. Fe does not ppt. from acidic solns. of dibromohydroxyquinoline, while Cu is ppted. completely. By means of this method 0.07 1% (and slightly higher amts.) of Cu in steel and in cast iron can be detd. W. R. Henn

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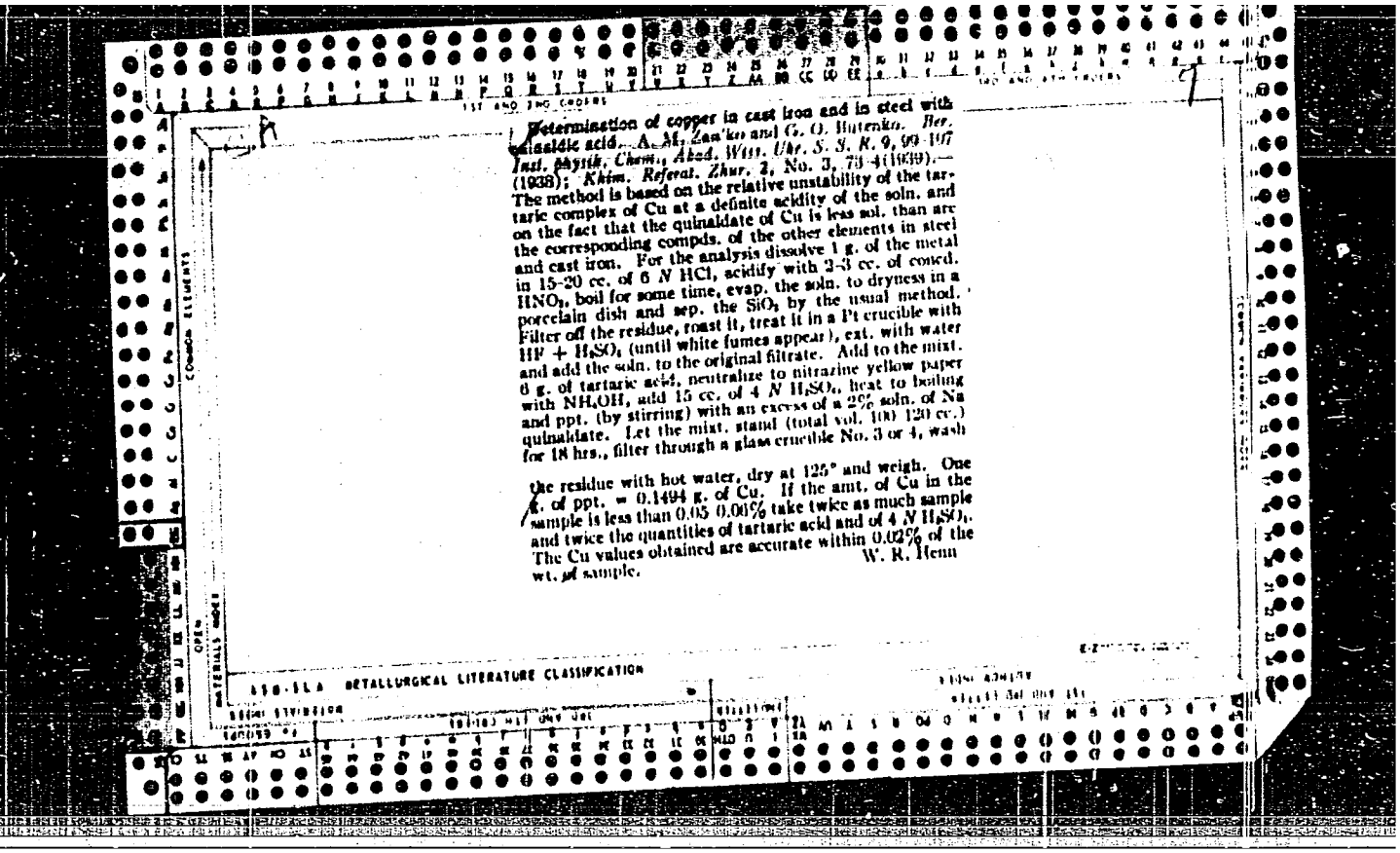

Determination of copper in cast iron and in steel with salicylic acid. A. M. Zaslavskii and G. O. Butenko. *Ber. Inst. physik. Chem., Akad. Wiss. Ukr. S. S. R.* 9, 99-107 (1938); *Khim. Referat. Zhur.* 2, No. 3, 73-4 (1939).—The method is based on the relative unstability of the tartaric complex of Cu at a definite acidity of the soln. and on the fact that the quinaldate of Cu is less sol. than are the corresponding compds. of the other elements in steel and cast iron. For the analysis dissolve 1 g. of the metal in 15-20 cc. of 6 *N* HCl, acidify with 2-3 cc. of concd. HNO_3, boil for some time, evap. the soln. to dryness in a porcelain dish and sep. the SiO_2 by the usual method. Filter off the residue, roast it, treat it in a Pt crucible with HF + H_2SO_4 (until white fumes appear), ext. with water and add the soln. to the original filtrate. Add to the mixt. 6 g. of tartaric acid, neutralize to nitrazine yellow paper with NH_4OH, add 15 cc. of 4 *N* H_2SO_4, heat to boiling and ppt. (by stirring) with an excess of a 2% soln. of Na quinaldate. Let the mixt. stand (total vol. 100-120 cc.) for 18 hrs., filter through a glass crucible No. 3 or 4, wash the residue with hot water, dry at 125° and weigh. One g. of ppt. = 0.1494 g. of Cu. If the amt. of Cu in the sample is less than 0.05 0.01% take twice as much sample and twice the quantities of tartaric acid and of 4 *N* H_2SO_4. The Cu values obtained are accurate within 0.02% of the wt. of sample.

W. R. Henn

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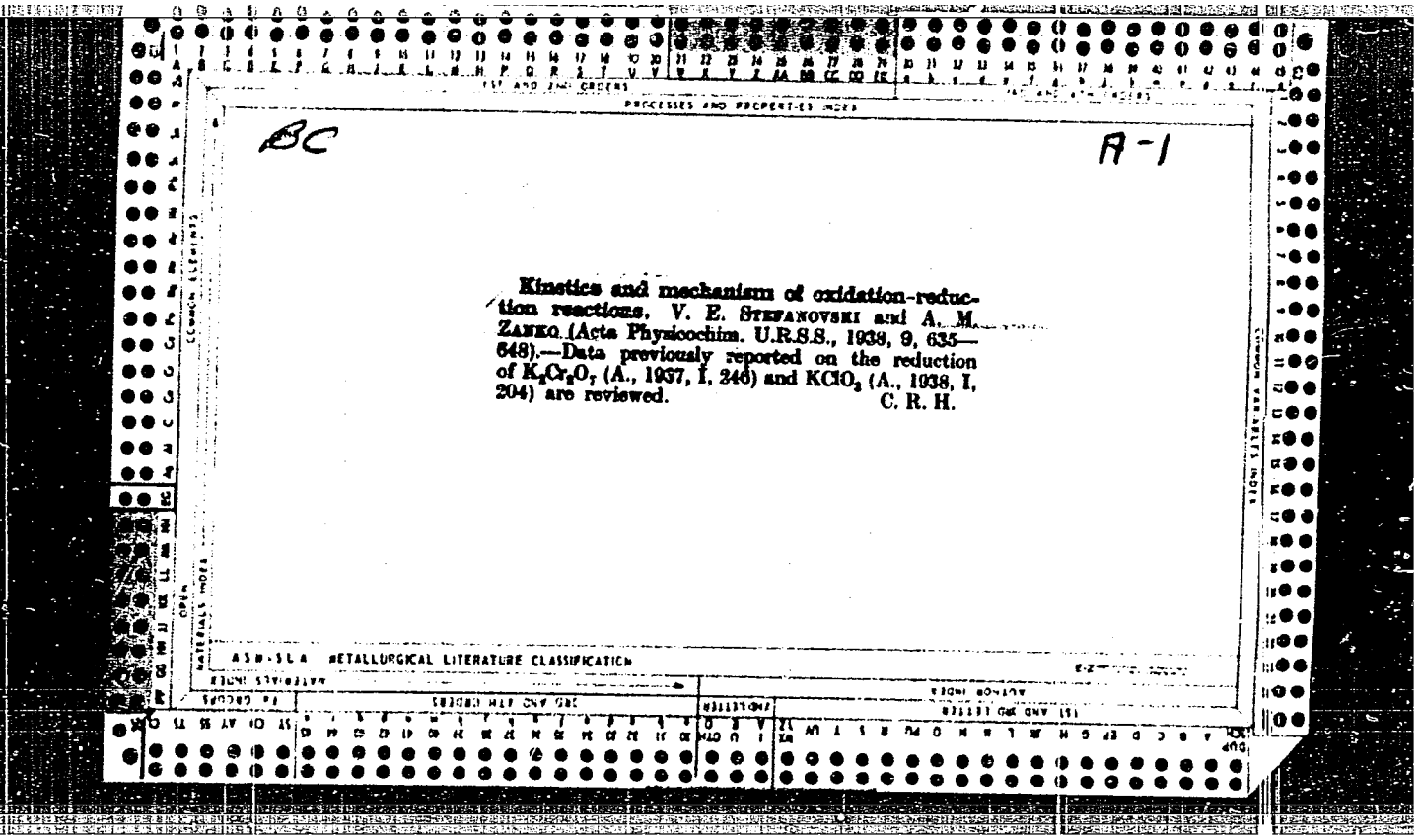

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A-1

Kinetics and mechanism of oxidation-reduction reactions. V. E. STEPANOVSKI and A. M. ZAIKO. (Acta Physicochim. U.R.S.S., 1938, 9, 635–648).—Data previously reported on the reduction of $K_2Cr_2O_7$ (A., 1937, I, 246) and $KClO_3$ (A., 1938, I, 204) are reviewed. C. R. H.

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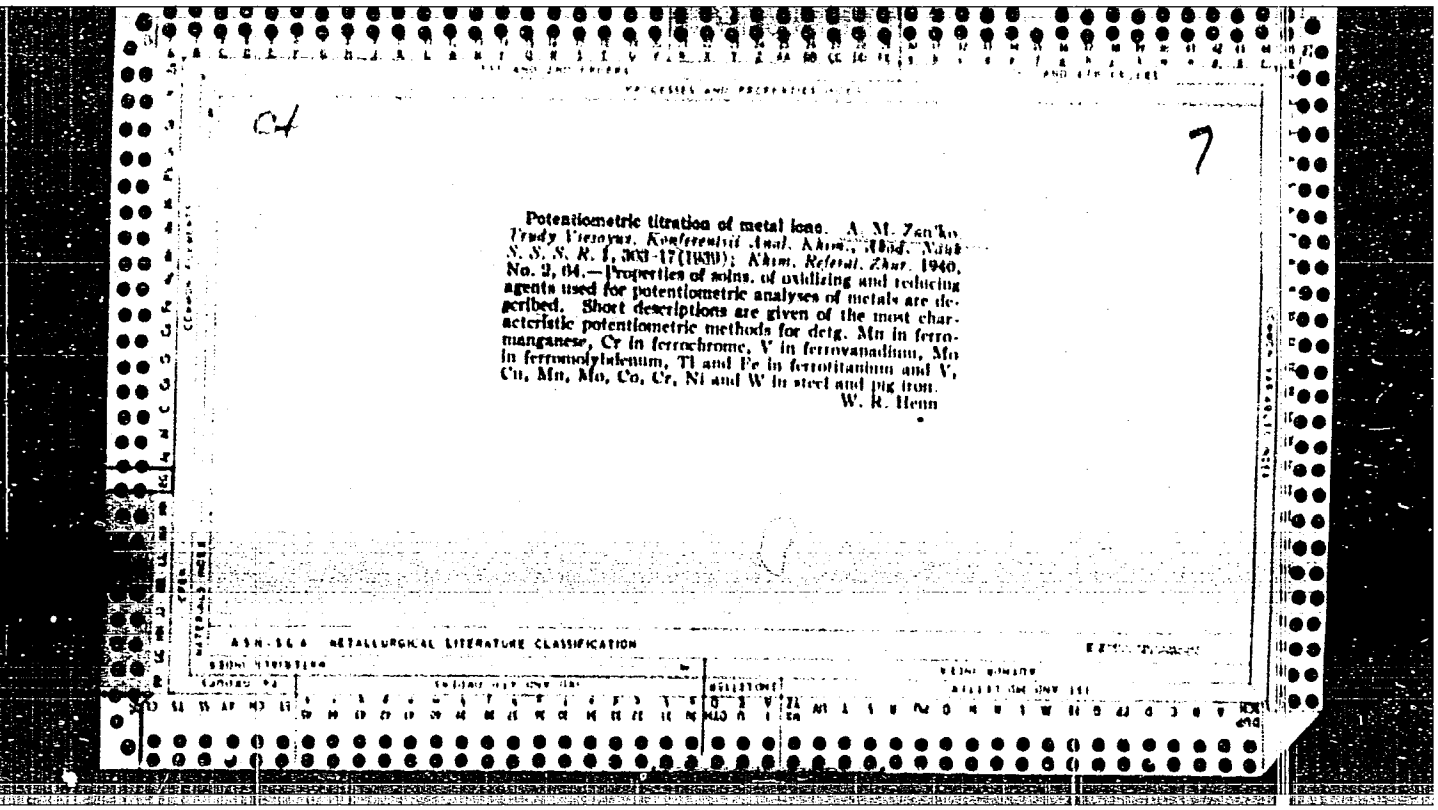

Potentiometric titration of metal ions. A. M. Zen'ko. *Trudy Vsesoyuz. Konferentsii Anal. Khim., Akad. Nauk S. S. S. R.* **1**, 303–17 (1939); *Khim. Referat. Zhur.* 1940, No. 9, 64.—Properties of solns. of oxidizing and reducing agents used for potentiometric analyses of metals are described. Short descriptions are given of the most characteristic potentiometric methods for detg. Mn in ferromanganese, Cr in ferrochrome, V in ferrovanadium, Mo in ferromolybdenum, Ti and Fe in ferrotitanium and V, Cu, Mn, Mo, Co, Cr, Ni and W in steel and pig iron.
W. R. Henn

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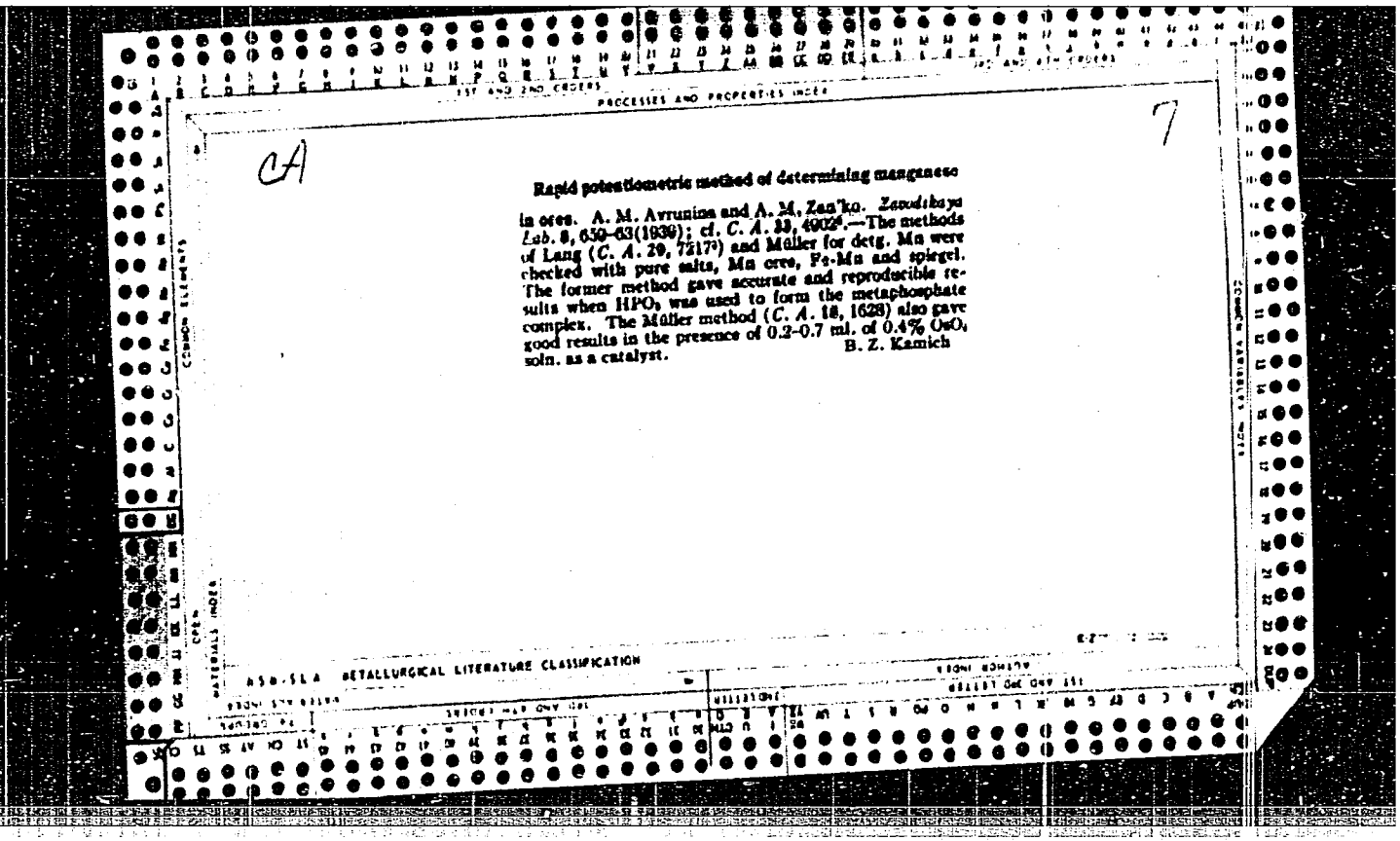

CA

7

Rapid potentiometric method of determining manganese in ores. A. M. Avrunina and A. M. Zan'ko. *Zavodskaya Lab.* 8, 630–63(1939); cf. *C. A.* 33, 4902⁸.—The methods of Lang (*C. A.* 29, 7217⁹) and Müller for detg. Mn were checked with pure salts, Mn ores, Fe-Mn and spiegel. The former method gave accurate and reproducible results when HPO_3 was used to form the metaphosphate complex. The Müller method (*C. A.* 18, 1628) also gave good results in the presence of 0.2–0.7 ml. of 0.4% OsO_4 soln. as a catalyst.
B. Z. Kamich

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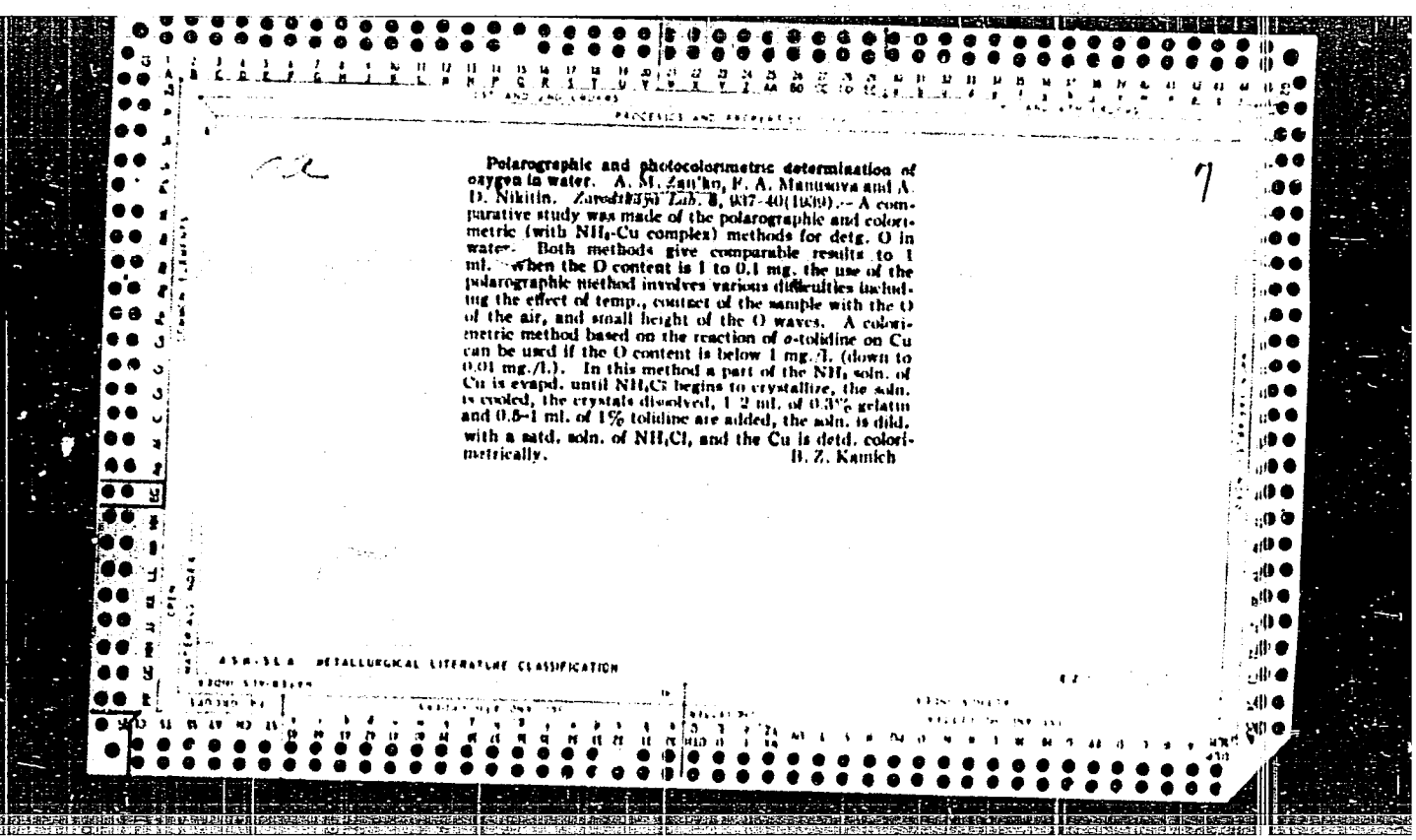

Polarographic and photocolorimetric determination of oxygen in water. A. M. Zan'kin, F. A. Manusova and A. D. Nikitin. Zavodskaya Lab. 8, 937-40(1939).-- A comparative study was made of the polarographic and colorimetric (with NH_3-Cu complex) methods for detg. O in water. Both methods give comparable results to 1 ml. when the O content is 1 to 0.1 mg. the use of the polarographic method involves various difficulties including the effect of temp., contact of the sample with the O of the air, and small height of the O waves. A colorimetric method based on the reaction of *o*-tolidine on Cu can be used if the O content is below 1 mg./l. (down to 0.01 mg./l.). In this method a part of the NH_3 soln. of Cu is evapd. until NH_4Cl begins to crystallize, the soln. is cooled, the crystals dissolved, 1-2 ml. of 0.3% gelatin and 0.5-1 ml. of 1% tolidine are added, the soln. is dild. with a satd. soln. of NH_4Cl, and the Cu is detd. colorimetrically.

B. Z. Kamich

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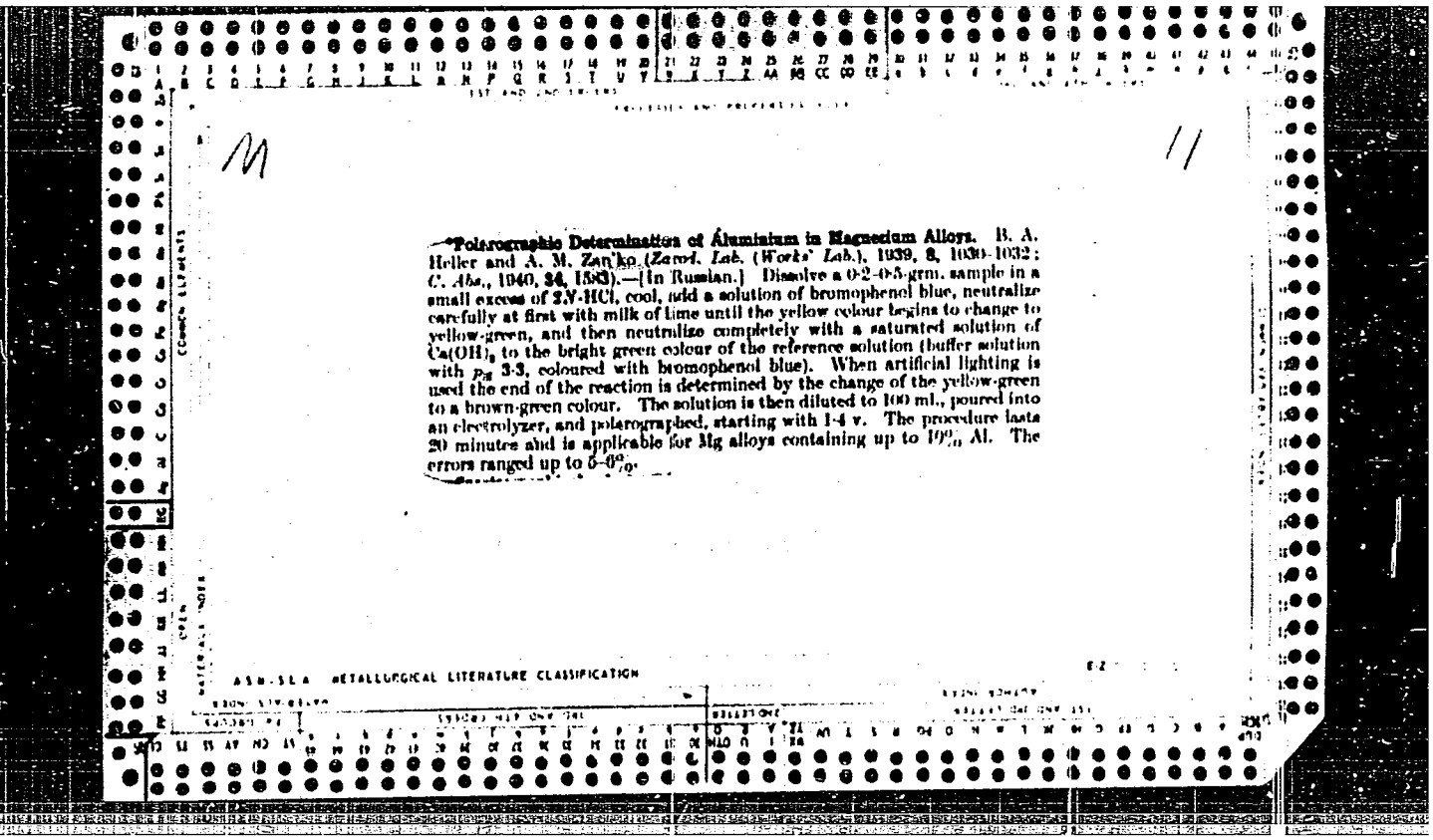

Polarographic Determination of Aluminium in Magnesium Alloys. B. A. Heller and A. M. Zan'ko (*Zavod. Lab.* (*Works' Lab.*), 1939, **8**, 1030–1032; *C. Abs.*, 1940, **34**, 1583).—[In Russian.] Dissolve a 0·2–0·5-grm. sample in a small excess of 2*N*-HCl, cool, add a solution of bromophenol blue, neutralize carefully at first with milk of lime until the yellow colour begins to change to yellow-green, and then neutralize completely with a saturated solution of $Ca(OH)_2$ to the bright green colour of the reference solution (buffer solution with p_H 3·3, coloured with bromophenol blue). When artificial lighting is used the end of the reaction is determined by the change of the yellow-green to a brown-green colour. The solution is then diluted to 100 ml., poured into an electrolyzer, and polarographed, starting with 1·4 v. The procedure lasts 20 minutes and is applicable for Mg alloys containing up to 10% Al. The errors ranged up to 5–6%.

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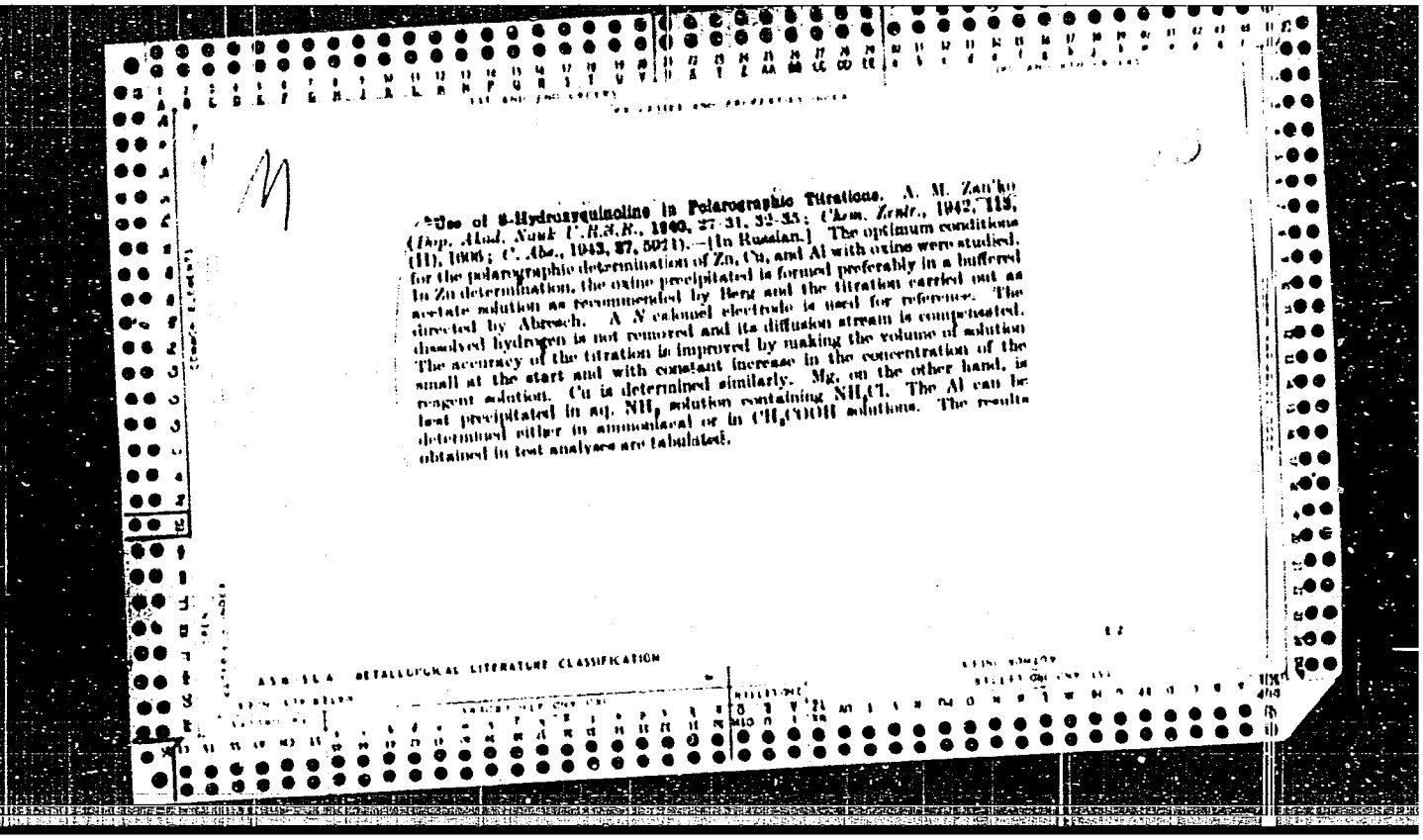

Use of 8-Hydroxyquinoline in Polarographic Titrations. A. M. Zan'ko (*Dop. Akad. Nauk U.R.S.R.*, 1940, 27-31, 32-35; *Chem. Zentr.*, 1942, 113, (II), 1006; *C. Abs.*, 1943, 37, 5021).—[In Russian.] The optimum conditions for the polarographic determination of Zn, Cu, and Al with oxine were studied. In Zn determination, the oxine precipitated is formed preferably in a buffered acetate solution as recommended by Berg and the titration carried out as directed by Abresch. A *N* calomel electrode is used for reference. The dissolved hydrogen is not removed and its diffusion stream is compensated. The accuracy of the titration is improved by making the volume of solution small at the start and with constant increase in the concentration of the reagent solution. Cu is determined similarly. Mg, on the other hand, is best precipitated in aq. NH_3 solution containing NH_4Cl. The Al can be determined either in ammoniacal or in CH_3COOH solutions. The results obtained in test analyses are tabulated.

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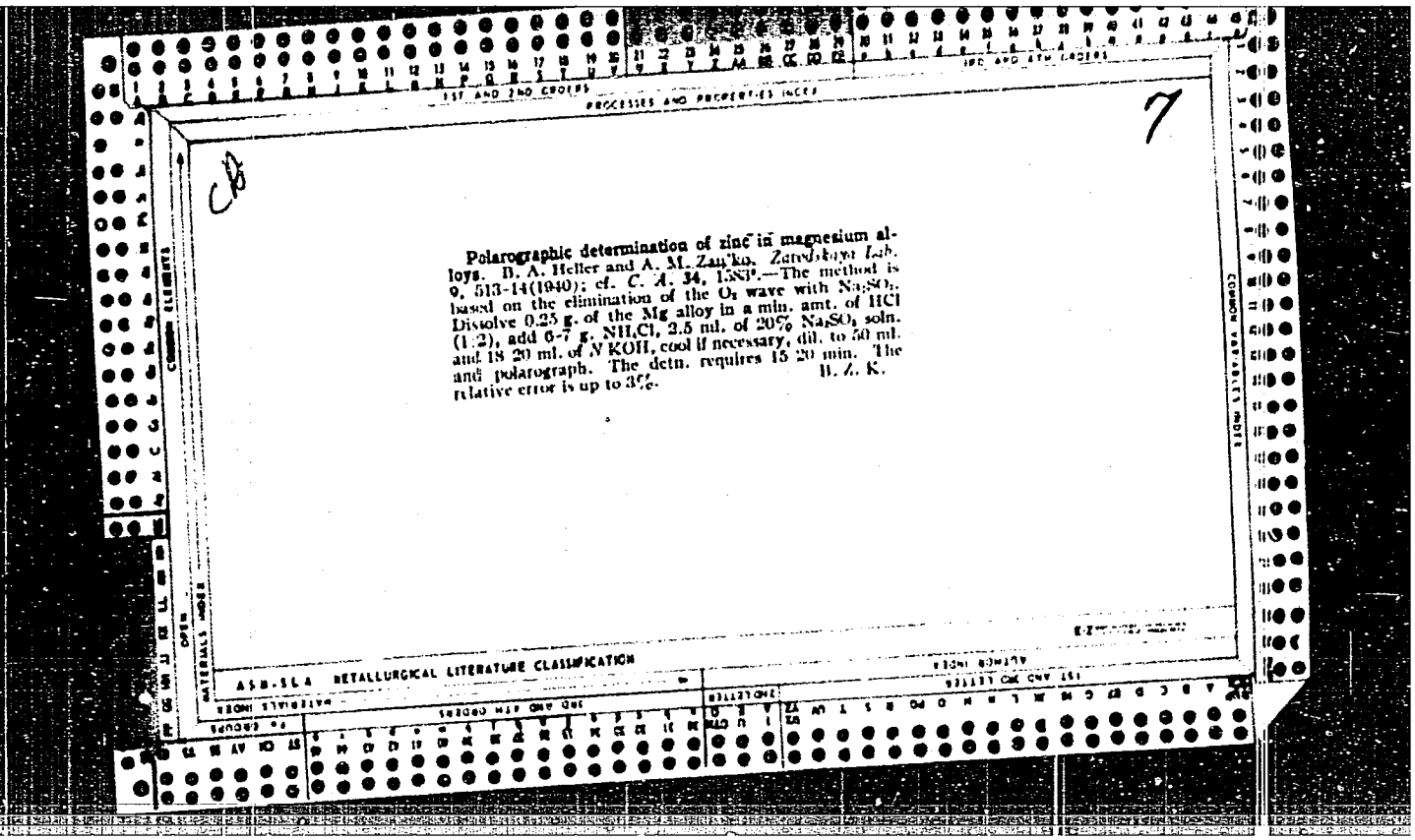

Polarographic determination of zinc in magnesium alloys. B. A. Heller and A. M. Zaučko. *Zavodskaya Lab.* 9, 513-14(1940); cf. *C. A.* 34, 1587⁹.—The method is based on the elimination of the O_2 wave with Na_2SO_3. Dissolve 0.25 g. of the Mg alloy in a min. amt. of HCl (1:2), add 6-7 g. NH_4Cl, 2.5 ml. of 20% Na_2SO_3 soln. and 18-20 ml. of *N* KOH, cool if necessary, dil. to 50 ml. and polarograph. The detn. requires 15-20 min. The relative error is up to 3%. B. Z. K.

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A.C.S. Electricity & Physics

Polarigraphic determination of titanium. A. M. Zan'ko, B. A. Geller, and A. D. Nikitin. Zavodskaya Lab., 9 [9] 976–79 (1940); *Khim. Referat. Zhur.*, 4 [3] 82 (1941).—Small amounts (0.1 to 0.5%) of Ti can be determined polarigraphically in the presence of large quantities of Fe and Al (50 to 90%). The determination should be conducted at an acidity not less than 0.05 *N* in the presence of tartaric or citric acid. Fe^{+++} and O interfere. The former is changed to the divalent form by shaking it with the Hg of the anode for 5 to 10 min. Simultaneously, the O is completely removed from the solution by reaction with the reduced Fe. For the analysis of kaolin, 0.3 gm. is treated with H_2SO_4 + HF, and the insoluble residue is fused with potassium pyrosulfate. The fusion is dissolved in the first filtrate, a little iron sulfate is added to it, and the volume is made to 50 cc. Ten milliliters are taken into the electrolyser, N is passed for 5 min., 0.5 gm. of tartaric acid is added, and the solution is analyzed. An alternate method consists in dissolving the sample in HCl, igniting the insoluble residue, treating it with HF, and fusing with potassium pyrosulfate. The fusion is dissolved in the first filtrate, and the analysis is finished as before. The results obtained by this method agree with those obtained gravimetrically and colorimetrically.
M.Ho.

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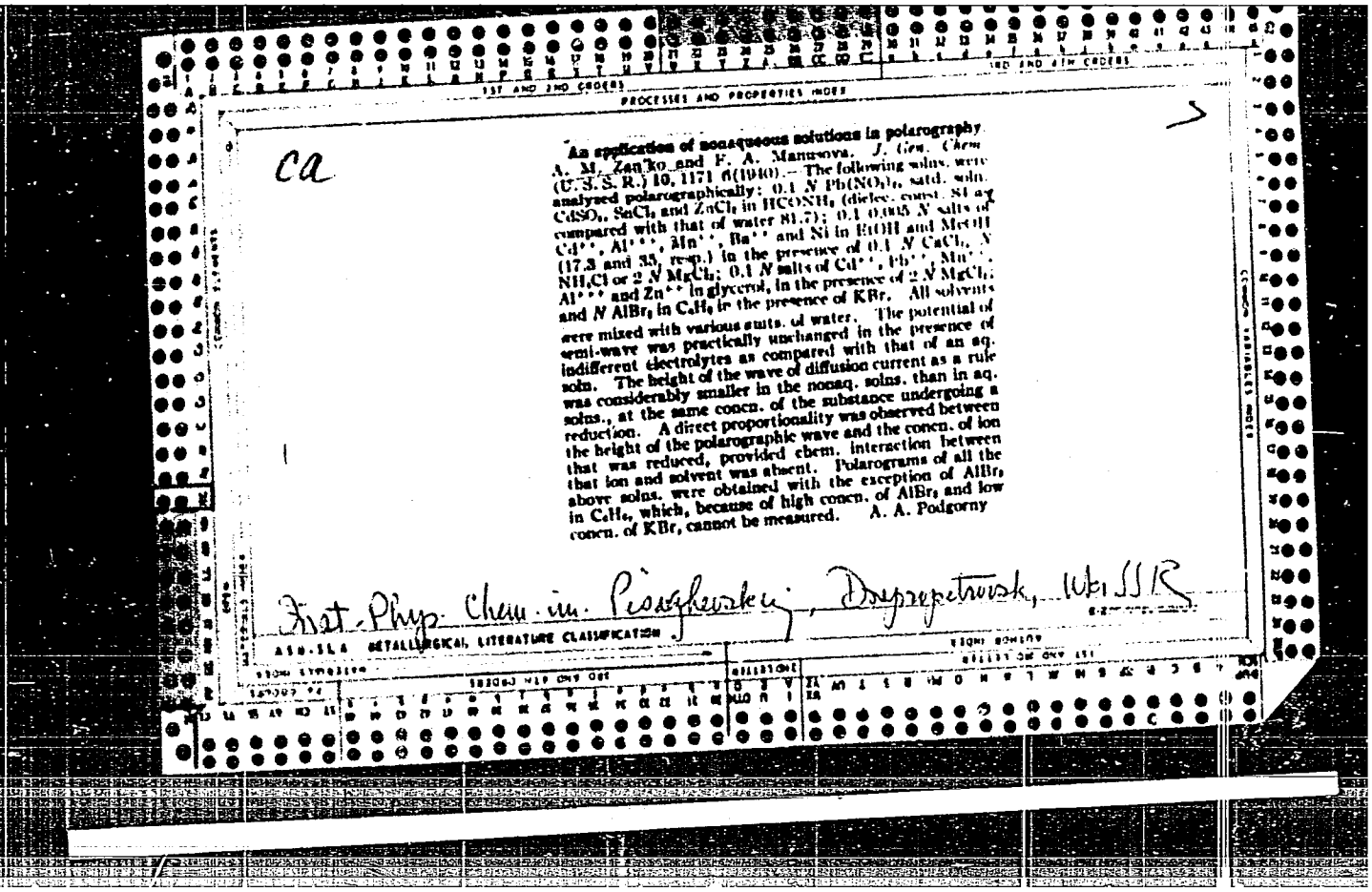

PROCESSES AND PROPERTIES INDEX

ca

An application of nonaqueous solutions in polarography. A. M. Zen'ko and F. A. Manusova. *J. Gen. Chem.* (U.S.S.R.) 10, 1171-6(1940).—The following solns. were analyzed polarographically: 0.1 *N* $Pb(NO_3)_2$, satd. soln. $CdSO_4$, $SnCl_2$ and $ZnCl_2$ in $HCONH_2$ (dielec. const. 81 as compared with that of water 81.7); 0.1-0.005 *N* salts of Cd^{++}, Al^{+++}, Mn^{++}, Ba^{++} and Ni in EtOH and MeOH (17.3 and 33, resp.) in the presence of 0.1 *N* $CaCl_2$, *N* NH_4Cl or 2 *N* $MgCl_2$; 0.1 *N* salts of Cd^{++}, Pb^{++}, Mn^{++}, Al^{+++} and Zn^{++} in glycerol, in the presence of 2 *N* $MgCl_2$ and *N* $AlBr_3$ in C_6H_6 in the presence of KBr. All solvents were mixed with various amts. of water. The potential of semi-wave was practically unchanged in the presence of indifferent electrolytes as compared with that of an aq. soln. The height of the wave of diffusion current as a rule was considerably smaller in the nonaq. solns. than in aq. solns., at the same concn. of the substance undergoing a reduction. A direct proportionality was observed between the height of the polarographic wave and the concn. of ion that was reduced, provided chem. interaction between that ion and solvent was absent. Polarograms of all the above solns. were obtained with the exception of $AlBr_3$ in C_6H_6, which, because of high concn. of $AlBr_3$ and low concn. of KBr, cannot be measured. A. A. Podgorny

Inst. Phys. Chem. im. Pisarzhevskii, Dnepropetrovsk, USSR

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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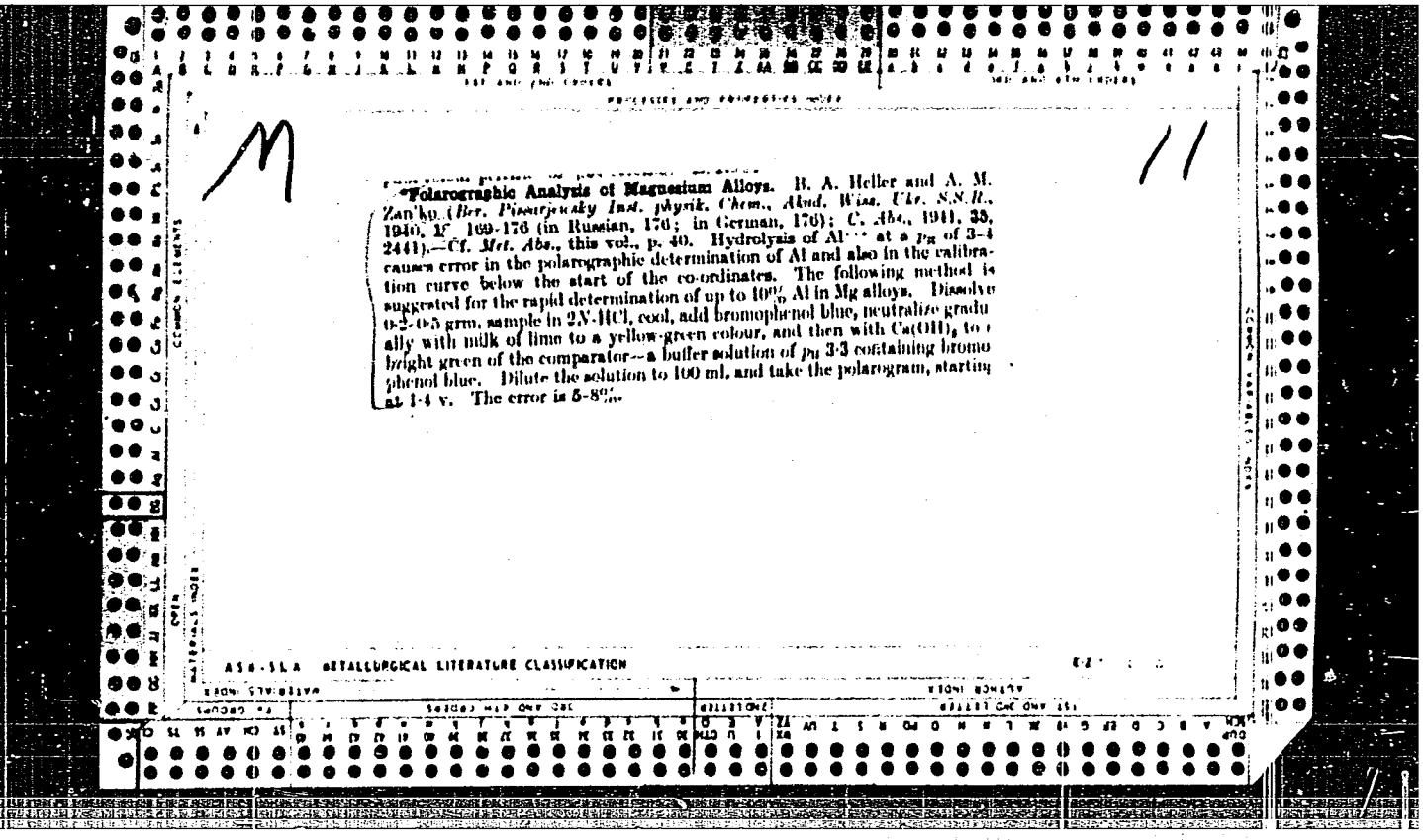

Polarographic Analysis of Magnesium Alloys. B. A. Heller and A. M. Zan'ko. (*Ber. Pissarjewsky Inst. physik. Chem., Akad. Wiss. Ukr. S.S.R.*, 1940, **1**, 169-176 (in Russian, 176; in German, 176); *C. Abs.*, 1941, **35**, 2441).—Cf. *Met. Abs.*, this vol., p. 40. Hydrolysis of Al··· at a p_H of 3-4 causes error in the polarographic determination of Al and also in the calibration curve below the start of the co-ordinates. The following method is suggested for the rapid determination of up to 10% Al in Mg alloys. Dissolve 0·2-0·5 grm. sample in 2*N*-HCl, cool, add bromophenol blue, neutralize gradually with milk of lime to a yellow-green colour, and then with $Ca(OH)_2$ to bright green of the comparator—a buffer solution of p_H 3·3 containing bromophenol blue. Dilute the solution to 100 ml. and take the polarogram, starting at 1·4 v. The error is 5-8%.

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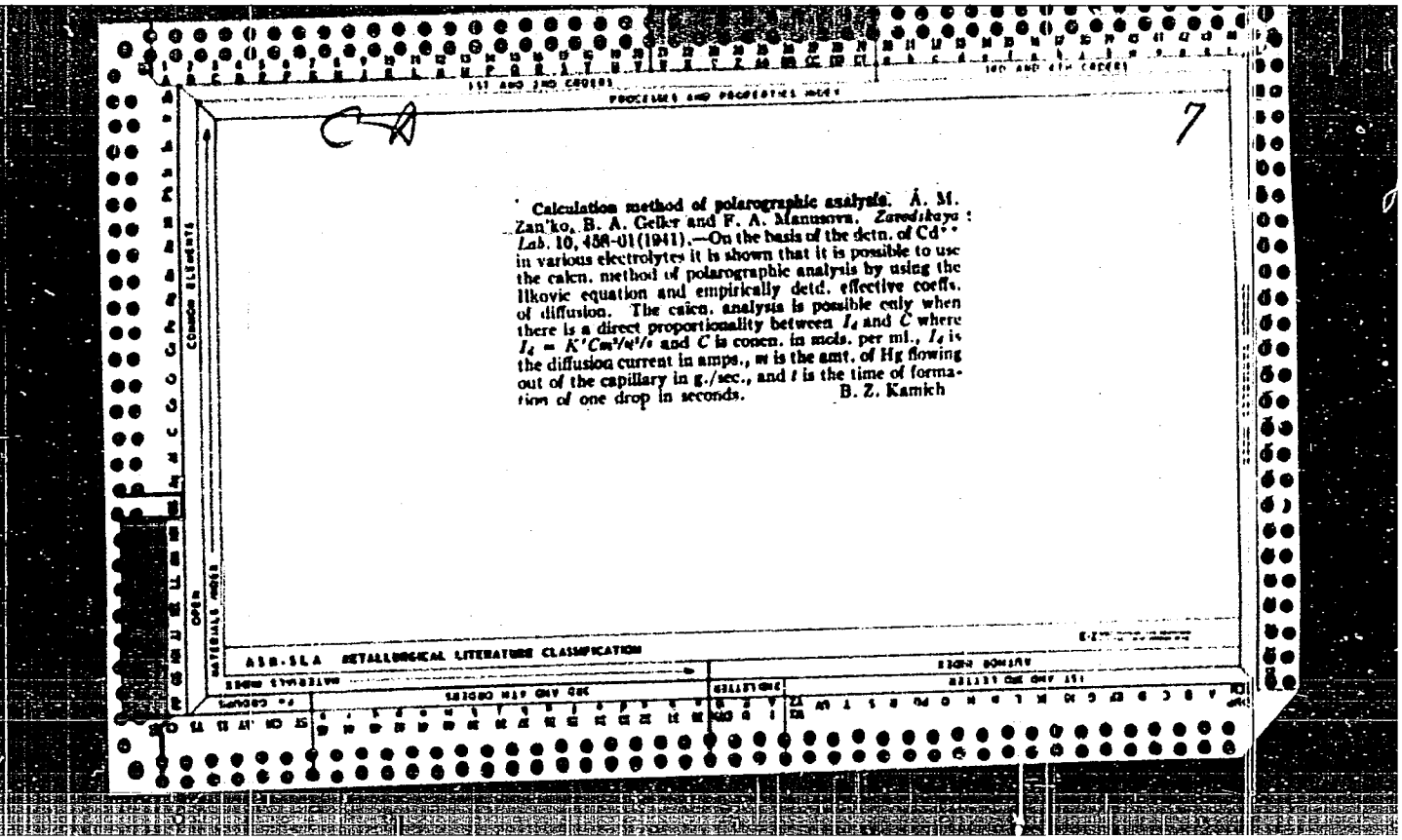

Calculation method of polarographic analysis. A. M. Zan'ko, B. A. Gelker and F. A. Manusova. *Zavodskaya Lab.* 10, 458-61 (1941).—On the basis of the detn. of Cd^{++} in various electrolytes it is shown that it is possible to use the calcn. method of polarographic analysis by using the Ilkovic equation and empirically detd. effective coeffs. of diffusion. The calcn. analysis is possible only when there is a direct proportionality between I_d and C where $I_d = K'Cm^{2/3}t^{1/6}$ and C is concn. in mols. per ml., I_d is the diffusion current in amps., m is the amt. of Hg flowing out of the capillary in g./sec., and t is the time of formation of one drop in seconds. B. Z. Kamich

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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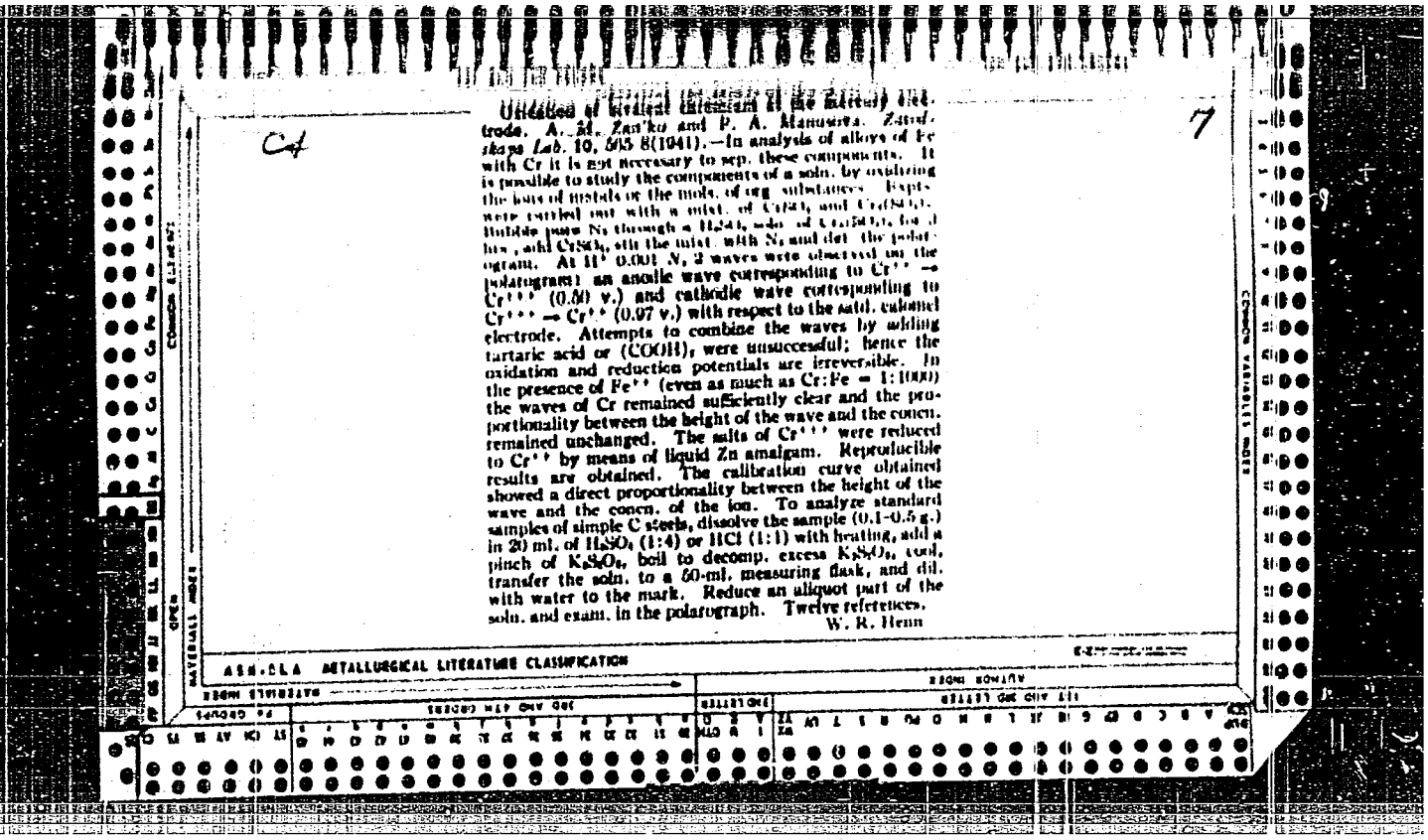

C4

7

Oxidation of bivalent chromium at the mercury electrode. A. M. Zan'ko and P. A. Manusova. *Zavodskaya Lab.* 10, 565-8(1941).—In analysis of alloys of Fe with Cr it is not necessary to sep. these components. It is possible to study the components of a soln. by oxidizing the ions of metals or the mols. of org. substances. Expts. were carried out with a mixt. of $CrSO_4$ and $Cr_2(SO_4)_3$. Bubble pure N_2 through a H_2SO_4 soln. of $Cr_2(SO_4)_3$ for 3 hrs., add $CrSO_4$, stir the mixt. with N_2 and det. the polarogram. At H^+ 0.001 N, 2 waves were observed on the polarogram: an anodic wave corresponding to $Cr^{++} \rightarrow Cr^{+++}$ (0.50 v.) and cathodic wave corresponding to $Cr^{+++} \rightarrow Cr^{++}$ (0.97 v.) with respect to the satd. calomel electrode. Attempts to combine the waves by adding tartaric acid or $(COOH)_2$ were unsuccessful; hence the oxidation and reduction potentials are irreversible. In the presence of Fe^{++} (even as much as Cr:Fe = 1:1000) the waves of Cr remained sufficiently clear and the proportionality between the height of the wave and the concn. remained unchanged. The salts of Cr^{+++} were reduced to Cr^{++} by means of liquid Zn amalgam. Reproducible results are obtained. The calibration curve obtained showed a direct proportionality between the height of the wave and the concn. of the ion. To analyze standard samples of simple C steels, dissolve the sample (0.1-0.5 g.) in 20 ml. of H_2SO_4 (1:4) or HCl (1:1) with heating, add a pinch of $K_2S_2O_8$, boil to decomp. excess $K_2S_2O_8$, cool, transfer the soln. to a 50-ml. measuring flask, and dil. with water to the mark. Reduce an aliquot part of the soln. and exam. in the polarograph. Twelve references.

W. R. Henn

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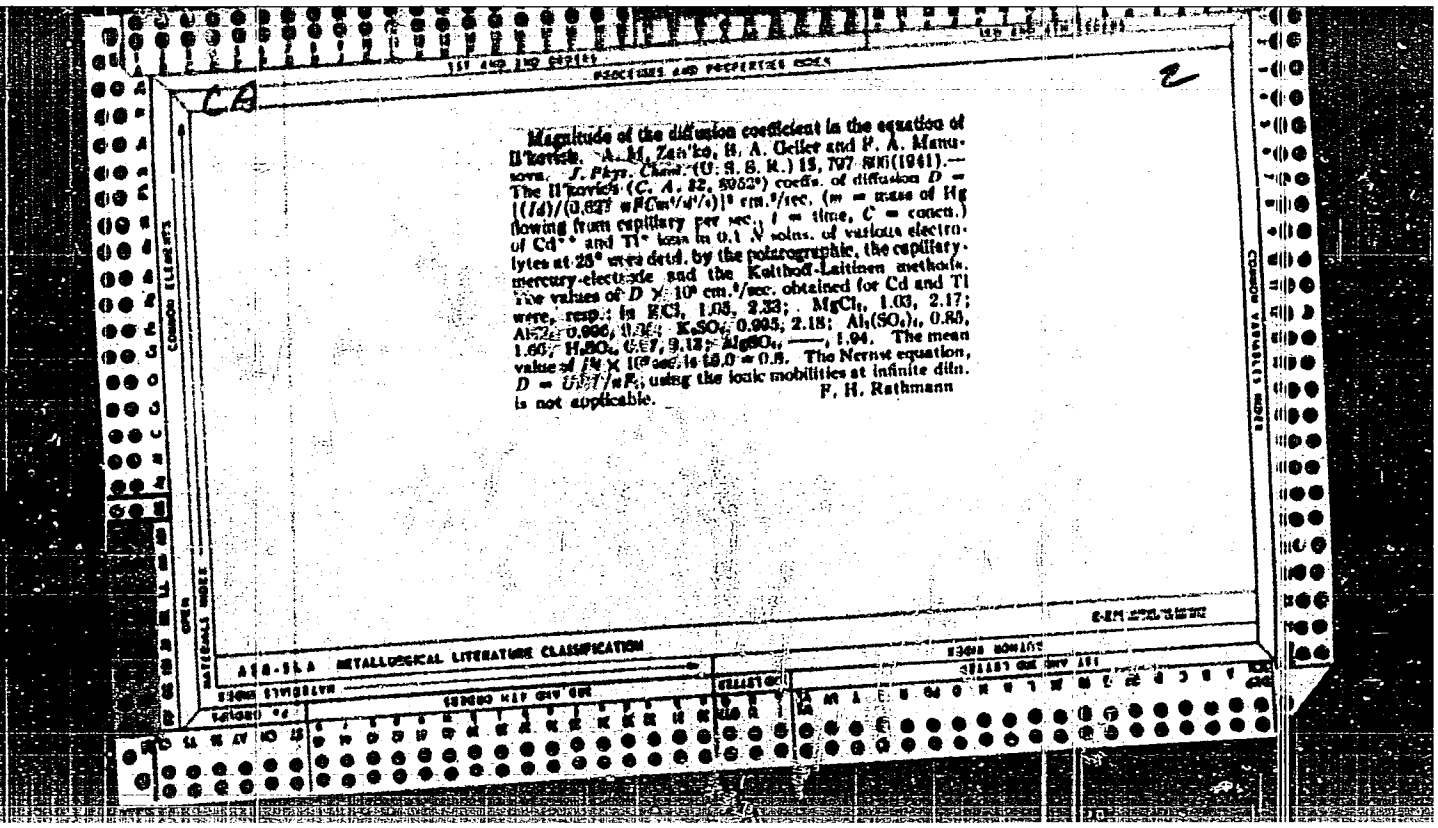
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX



CA

2

Magnitude of the diffusion coefficient in the equation of Il'kovich. A. M. Zan'ko, B. A. Geller and F. A. Manusova. *J. Phys. Chem.* (U. S. S. R.) 15, 797-806 (1941).—The Il'kovich (*C. A.* 32, 8952°) coeffs. of diffusion $D = [(Id)/(0.627\ nFCm^{2/3}t^{1/6})]^2$ cm.²/sec. (m = mass of Hg flowing from capillary per sec., t = time, C = concn.) of Cd^{++} and Tl^{+} ions in 0.1 N solns. of various electrolytes at 25° were detd. by the polarographic, the capillary-mercury-electrode and the Kolthoff-Laitinen methods. The values of $D \times 10^5$ cm.²/sec. obtained for Cd and Tl were, resp.: in KCl, 1.05, 2.33; $MgCl_2$, 1.03, 2.17; $AlCl_3$, 0.996, [illegible]; K_2SO_4, 0.995, 2.18; $Al_2(SO_4)_3$, 0.85, 1.60; H_2SO_4, [illegible], 9.12; $MgSO_4$, ——, 1.94. The mean value of $D \times 10^5$ sec. is 10.0 ± 0.8. The Nernst equation, $D = URT/nF$, using the ionic mobilities at infinite diln. is not applicable.

F. H. Rathmann

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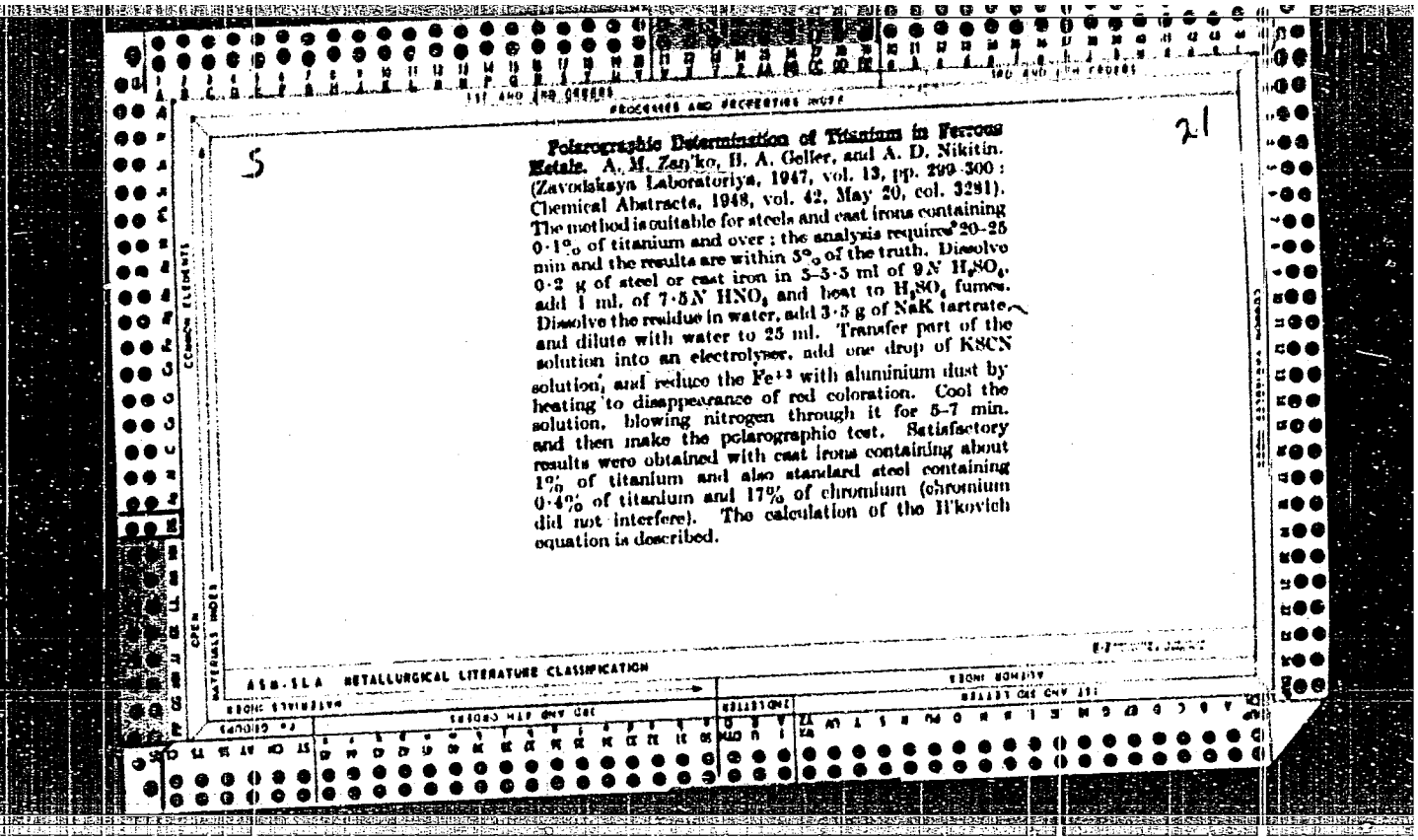

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21

Polarographic Determination of Titanium in Ferrous Metals. A. M. Zan'ko, B. A. Geller, and A. D. Nikitin. (Zavodskaya Laboratoriya, 1947, vol. 13, pp. 299-300: Chemical Abstracts, 1948, vol. 42, May 20, col. 3291). The method is suitable for steels and cast irons containing 0·1% of titanium and over; the analysis requires 20-25 min and the results are within 5% of the truth. Dissolve 0·2 g of steel or cast iron in 5-5·5 ml of 9*N* H_2SO_4, add 1 ml. of 7·5*N* HNO_3 and heat to H_2SO_4 fumes. Dissolve the residue in water, add 3·5 g of NaK tartrate, and dilute with water to 25 ml. Transfer part of the solution into an electrolyser, add one drop of KSCN solution, and reduce the Fe^{+3} with aluminium dust by heating to disappearance of red coloration. Cool the solution, blowing nitrogen through it for 5-7 min. and then make the polarographic test. Satisfactory results were obtained with cast irons containing about 1% of titanium and also standard steel containing 0·4% of titanium and 17% of chromium (chromium did not interfere). The calculation of the Il'kovich equation is described.

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CA

Use of a liquid interferometer in quantitative analysis. I. Investigation of dilute solutions of strong electrolytes. A. M. Zan'ko and I. L. Kukhtevich (Dnepropetrovsk Pharm. Inst.). *Zhur. Anal. Khim.* 5, 75-81(1950).—Interferometer detns. were carried out on 16 solns. of HCl between 0.001 and 0.1 *N* and 27 NaOH solns. between 0.00101 and 0.16027 *M*. Readings were taken as outlined previously (*C.A.* 34, 6897). The readings were made with white light and then recalcd. for light of 546.07 mμ. Thus values were obtained for *N'*, the no. of fringes observed at 546.07 mμ, *s* the no. of fringes due to displacement, *N* the true no. of fringes (*N'* − *s*), Δn abs. value of refractive index, and Δn/*c* where *c* is concn. Plotting *N* and Δn vs. *c* gave straight lines. M. Hosch

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ZAN'KO, A. M.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Analytical Chemistry

(3)

Use of a liquid interferometer in quantitative analysis. III. Study of dilute solutions of hydrolyzable salts. I. L. Kukhtevich and A. M. Zan'ko (Dnepropetrovsk Pharm. Inst.). *J. Anal. Chem.* (U.S.S.R.) 7, 225-33(1952)(Engl. translation).—See *C.A.* 47, 1628i. H. L. H.

11-56-51

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

KUKHTEVICH, I.L.; ZAN'KO, A.M.

Use of liquid interferometer in quantitative analysis. IV. Shifts and determination of the number of lines between shifts. Zhur. Anal. Khim. 8, 84-9 '53. (MLRA 6:4)
(CA 47 no.20:10398 '53)

1. Dnepropetrovsk Pharm. Inst.

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KUKHTEVICH, I. L., ZAN'KO, A. M.

Chemistry, Analytical - Quantitative

Use of liquid interferometer in quantitative analysis. Part 3. Investigation of kilute solutions of hydrolysable salts. Zhur. anal. khim, 7, no. 4, 1952.

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KUKHTEVICH, I.L.; ZAN'KO, A. M.

Interferometer

Use of liquid interferometer in quantitative analysis. Part 3. Investigation of dilute solutions of hydrolysable salts. Zhur. anal. khim. 7, No. 4, 1952

Monthly List of Russian Accessions Library of Congress October 1952 UNCLASSIFIED

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PARAMONOV, V.; ROMENSKIY, V.; ZAN'KO, F., inzh.-konstruktor

Meat grinder. Obshchestv. pit. no.8:34 Ag '63. (MIRA 16:12)

1. Glavnyye inzhenery Poltavskogo zavoda prodovol'stvennogo mashinostroyeniya "Prodmash" (for Paramonov, Romenskiy).
2. Poltavskiy zavod prodovol'stvennogo mashinostroyeniya "Prodmash" (for Zan'ko).

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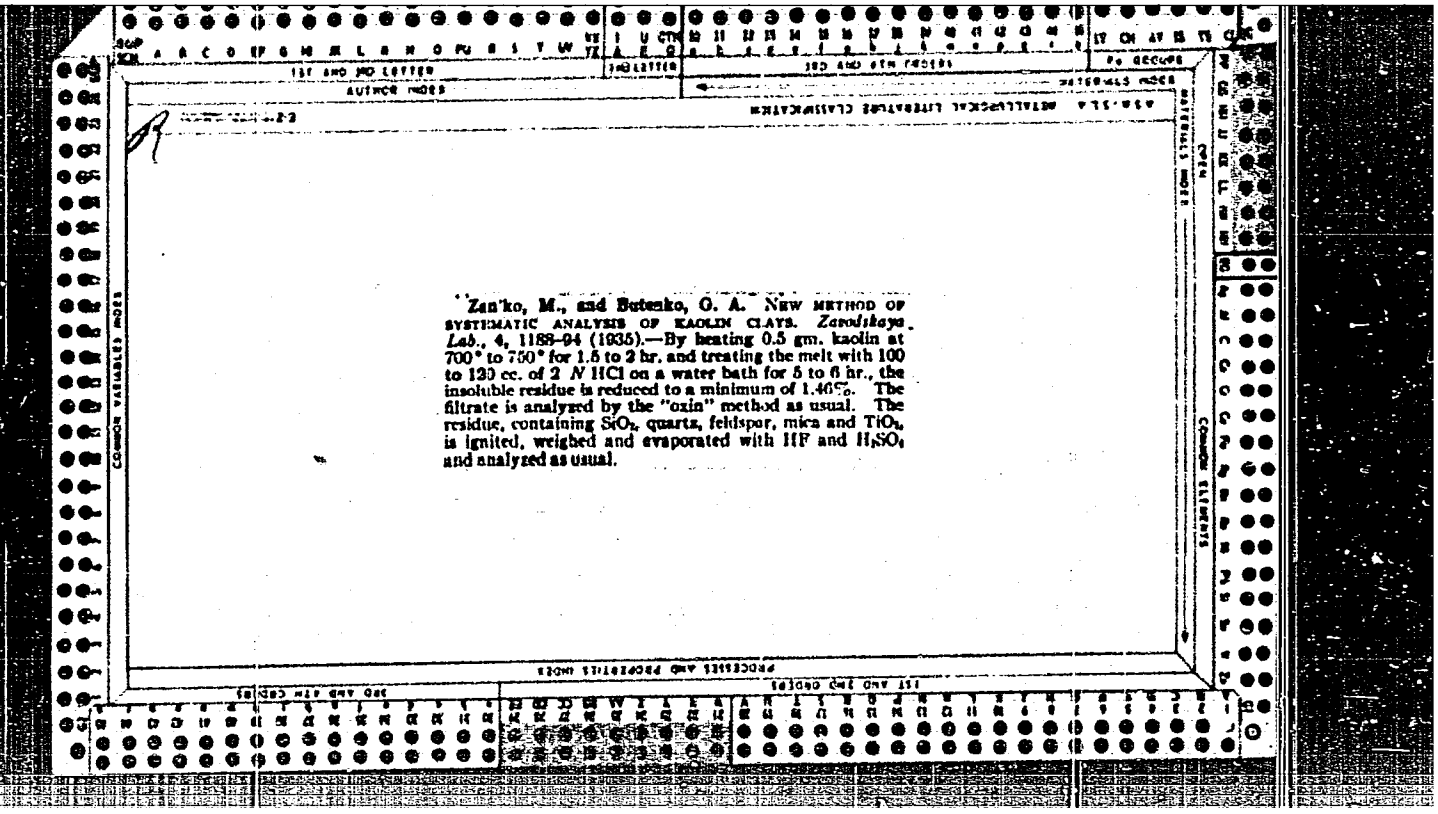

Zan'ko, M., and Butenko, O. A. NEW METHOD OF SYSTEMATIC ANALYSIS OF KAOLIN CLAYS. *Zavodskaya Lab.*, 4, 1188–94 (1935).—By heating 0.5 gm. kaolin at 700° to 750° for 1.5 to 2 hr. and treating the melt with 100 to 120 cc. of 2 *N* HCl on a water bath for 5 to 6 hr., the insoluble residue is reduced to a minimum of 1.46%. The filtrate is analyzed by the "oxin" method as usual. The residue, containing SiO_2, quartz, feldspar, mica and TiO_2, is ignited, weighed and evaporated with HF and H_2SO_4 and analyzed as usual.

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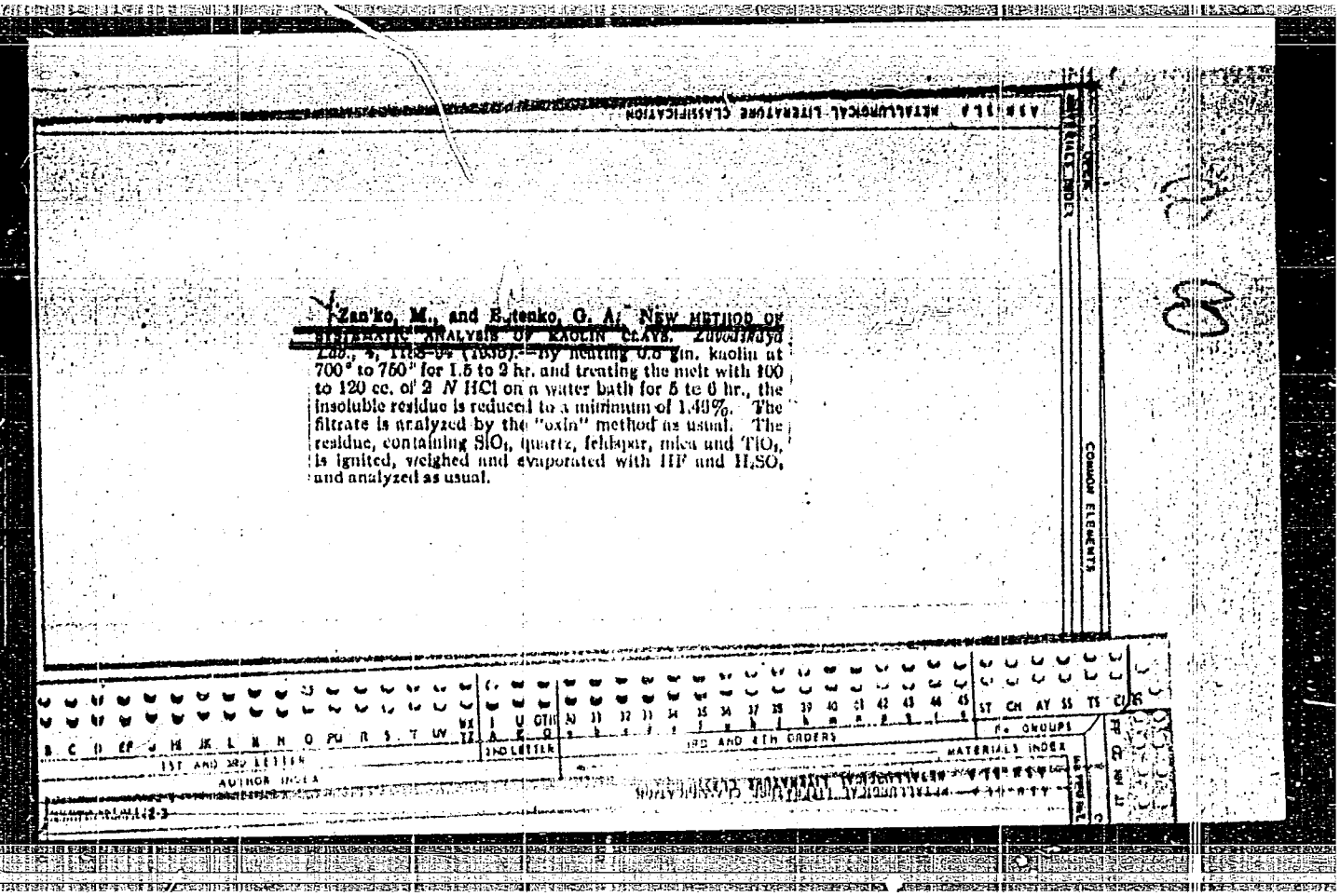

Zan'ko, M., and B.tenko, G. A. NEW METHOD OF SYSTEMATIC ANALYSIS OF KAOLIN CLAYS. *Zavodskaya Lab.*, 4, 1185–94 (1938).—By heating 0.5 gm. kaolin at 700° to 750° for 1.5 to 2 hr. and treating the melt with 100 to 120 cc. of 2 *N* HCl on a water bath for 5 to 6 hr., the insoluble residue is reduced to a minimum of 1.40%. The filtrate is analyzed by the "oxin" method as usual. The residue, containing SiO_2, quartz, feldspar, mica and TiO_2, is ignited, weighed and evaporated with HF and H_2SO_4 and analyzed as usual.

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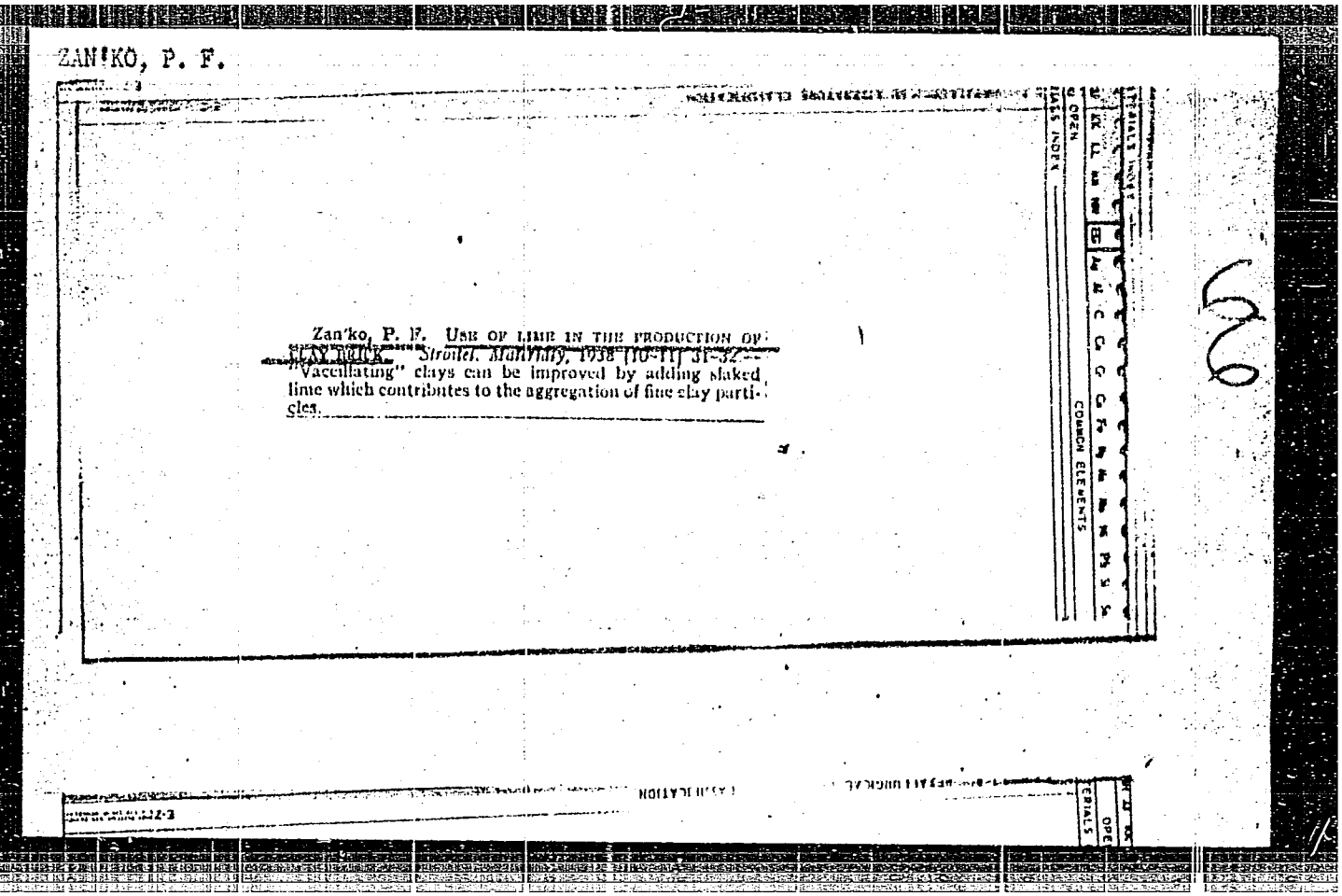

ZAN'KO, P. F.

Zan'ko, P. F. USE OF LIME IN THE PRODUCTION OF CLAY BRICK. Stroitel. Materialy, 1938 [10-11] 31-32.— "Vaccillating" clays can be improved by adding slaked lime which contributes to the aggregation of fine clay particles.

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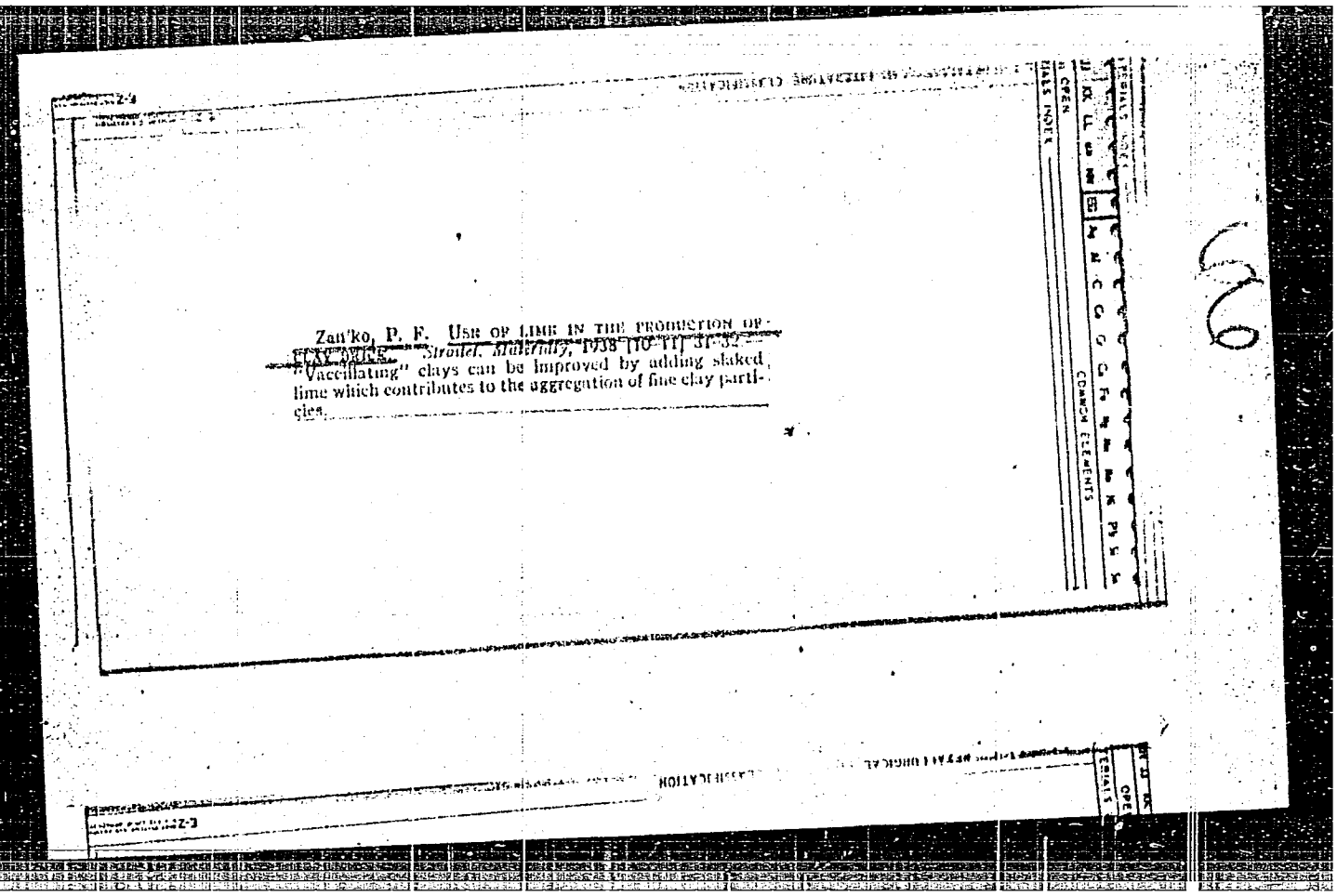

Zan'ko, P. F. USE OF LIME IN THE PRODUCTION OF [illegible] *Stroitel. Materialy*, 1938 [10-11] 31-32

"Vacillating" clays can be improved by adding slaked lime which contributes to the aggregation of fine clay particles.

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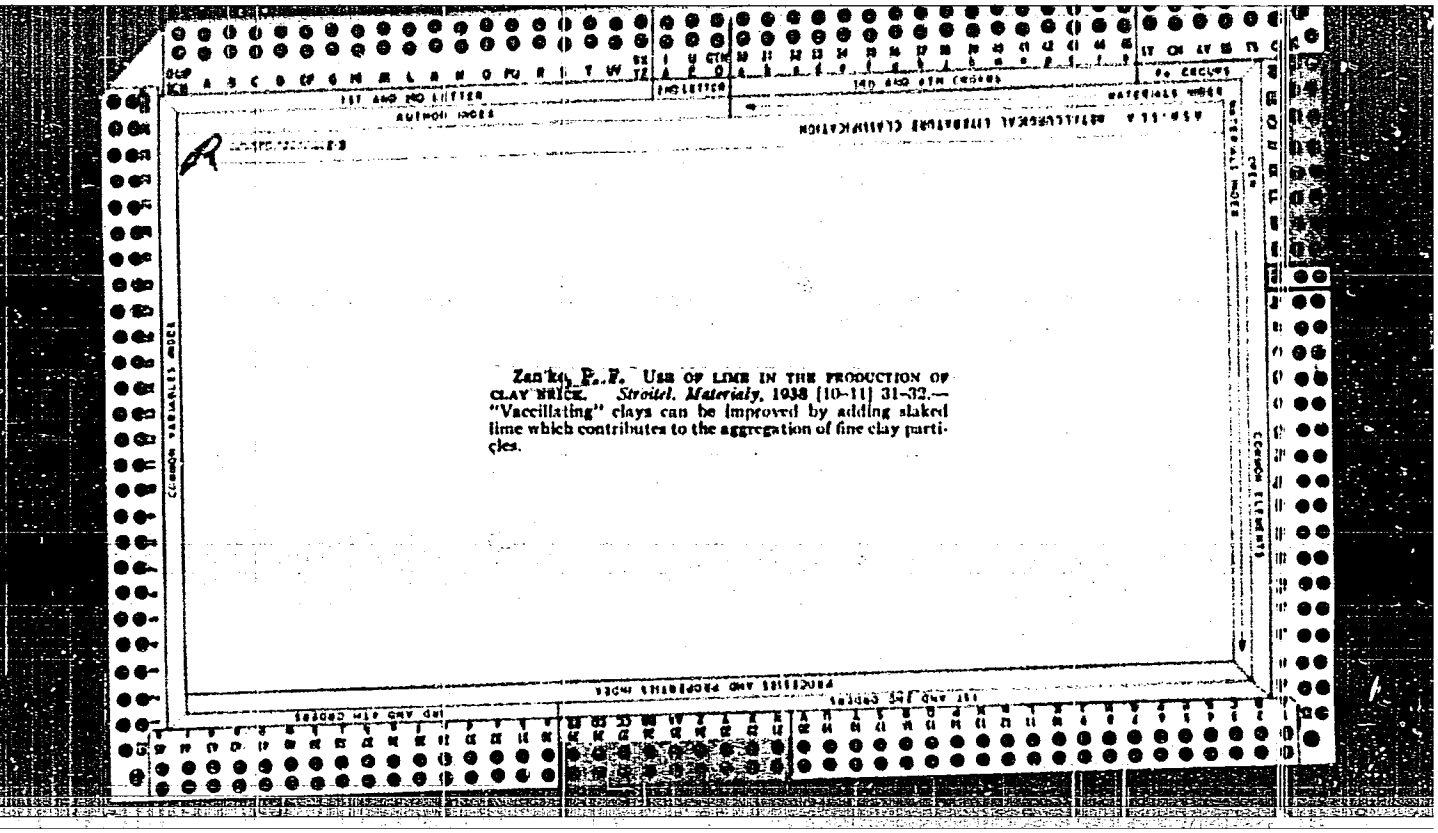

Zan'ko, P. P. USE OF LIME IN THE PRODUCTION OF CLAY BRICK. *Stroitel. Materialy*, 1938 [10–11] 31–32.— "Vaccillating" clays can be improved by adding slaked lime which contributes to the aggregation of fine clay particles.

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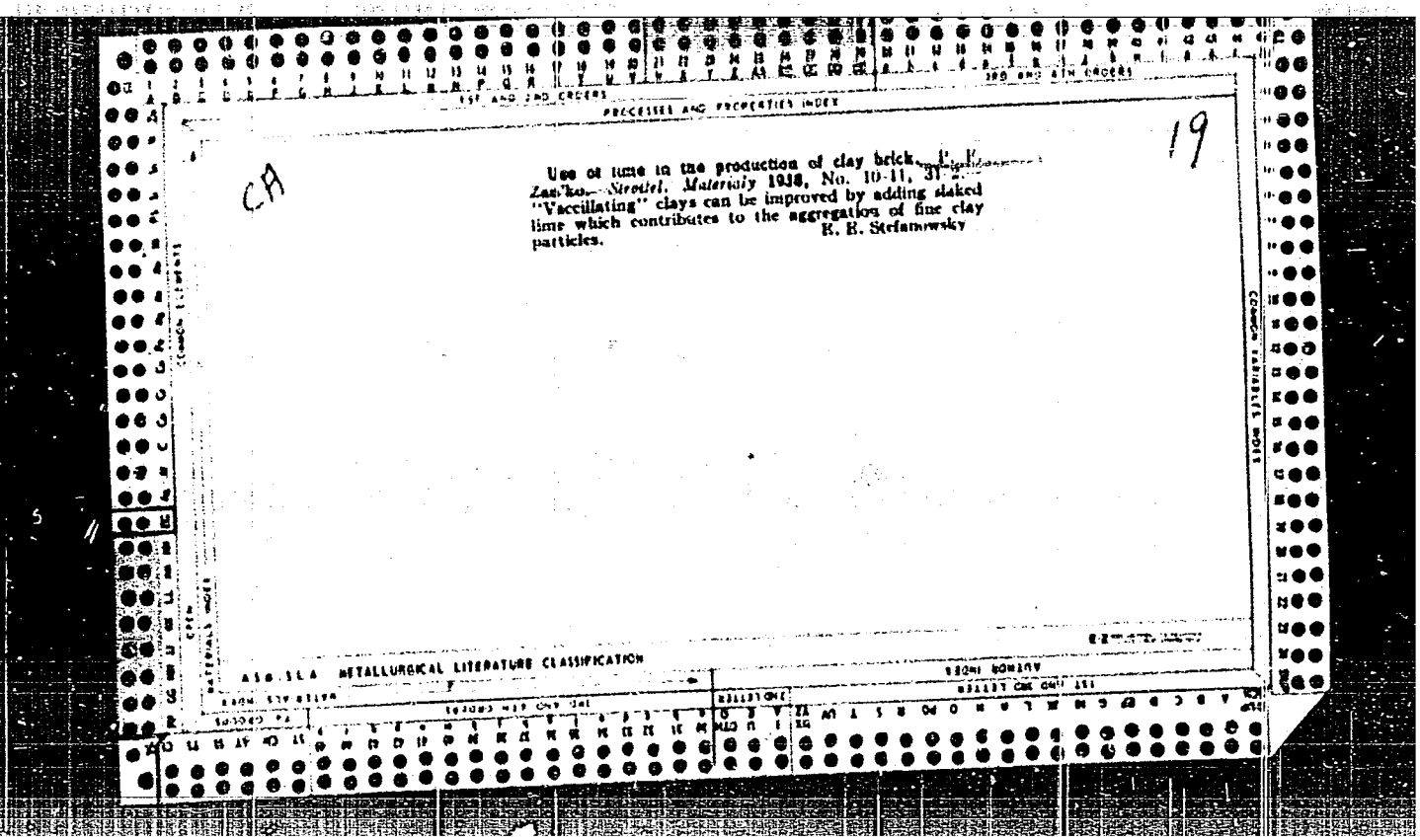
3RD AND 4TH ORDERS



CA

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Use of lime in the production of clay brick. P. F. Zas'ko. *Stroitel. Materialy* 1938, No. 10-11, 31-2. "Vaccillating" clays can be improved by adding slaked lime which contributes to the aggregation of fine clay particles.

E. E. Stefanowsky

COMMON ELEMENTS

COMMON VARIABLES INDEX

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOV, A.; CHALUKOV, A.

"A new more-productive MK50A electrode."
"Induction-heating systems and furnaces."

TEZHA PROMISHLENOST, Sofiia, Bulgaria, Vol. 8, no. 3, Mar. 1959

Monthly list of East Europe Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Unclas

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOV, L.V. (Moskva)

Psychology and pedagogics. Vop. psikhol. 9 no.6:3-11 N-D '63. (MIRA 17:4)

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOV, L. V.

"Oral and Visual Teaching. "

presented at the International Seminar on Psychology, Scientific, Audio-Visual Techniques, Caen, France, 3-12 May 1962

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STOYEV, K.D.; ZANKOV, Z.D. (Bolgariya)

Effect of the length of day on the characteristics of growth and development of grape seedlings. Agrobiologiia no.4:554-561 Jl-Ag '62. (MIRA 15:9)

1. Nauchno-issledovatel'skiy institut vinogradarstva i vinodeliya, Pleven.

(VITICULTURE) (PHOTOPERIODISM)

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ZANKOV, Z.D.

Differentiation of the buds in one-year old grapevine seedlings. Agrobiologiia no.4:628-629 Jl-Ag '65.
(MIRA 18:11)

1. Vyusshiy sel'skokhozaystvennyy institut imeni G.Dimitrova, g. Sofiya.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

BULGARIA / Cultivated Plants. Fruit Trees. Small Fruit Trees. M-7

Abs Jour: Ref Zhur-Biol., 1958, No 16, 73166.

Author : Zankov, Zdravko.
Inst : Not given.
Title : Establishing a Vineyard on Sandy Soils.

Orig Pub: Lozarstvo i vinarstvo, 1957, 6, No 1, 4-7.

Abstract: In 1951 experimental plantings were conducted of scion-rooted vineyards on sandy soils on an area of 60 ha in a series of Bulgarian rayons. Sand content in the soil was 69-81% to a depth of 140 cm. Phylloxera does not develop in these conditions. The best harvest was gathered in the third year from the "Mavrud" variety (11 t/ha) and from the "Pamid" variety in the fourth year (13 t/ha).

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Card 2/2

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ZANKOV, Zhako, inzh.

Concrete-tile flat roofing. Stroitelstvo 11 no.1:20-25 Ja '64.

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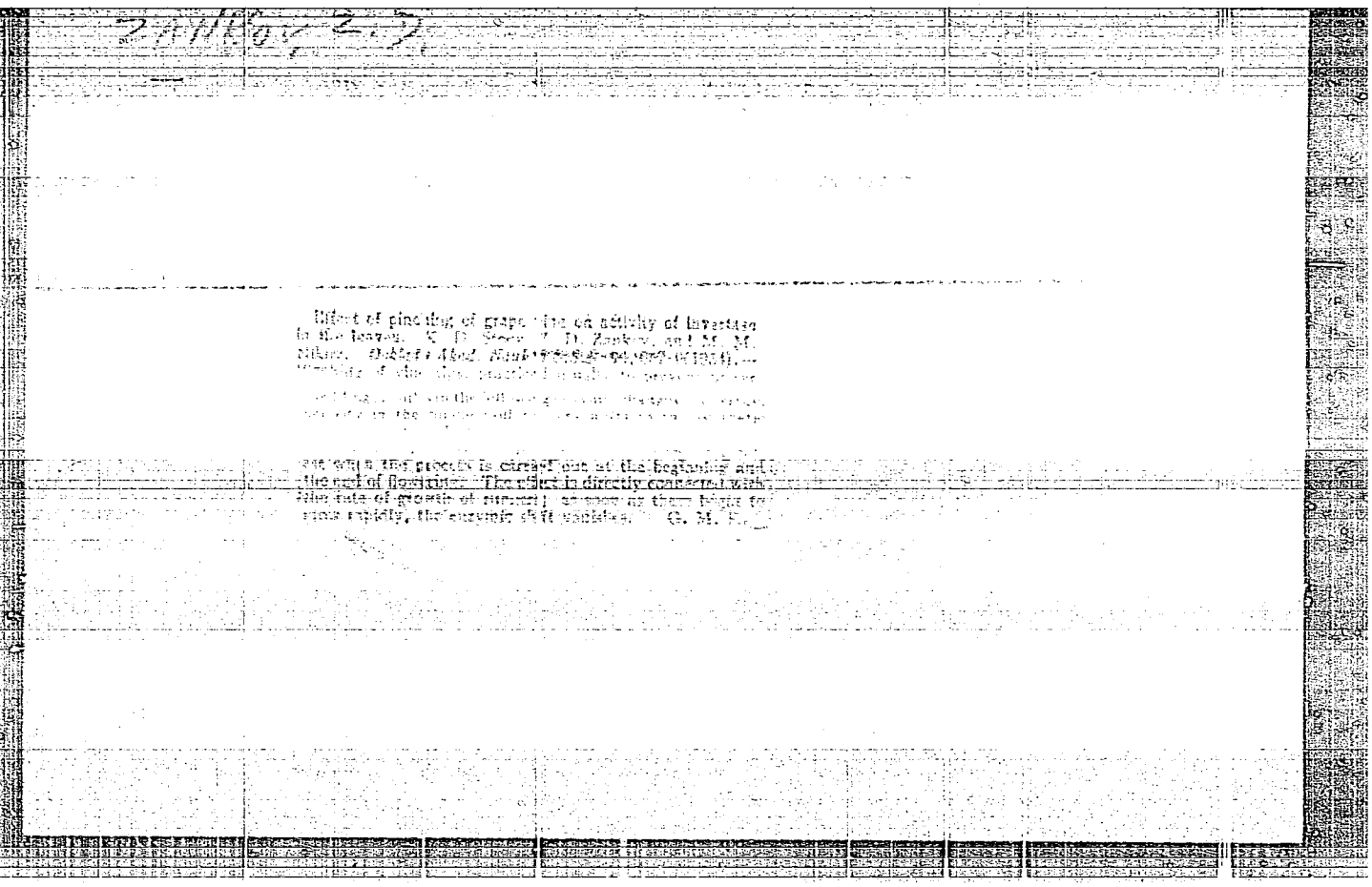

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

BULGARIA/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53840

Author : Todorov, Khr., Zankov, Z.D., Nedelchev, N., Stoyev, K.D.
Inst : -
Title : Experiments with Short and Long Pruning of Some Wine Grape Varieties.

Orig Pub : Lozarstvo i vinarstvo, 1957, 6, No 3, 4-19

Abstract : As the result of experiments conducted in 1952-1953 in the vineyards of labor cooperatives, the authors have reached the conclusion that the load of 8-10 eyes per plant, presently used on the establishments in Bulgaria, is insufficient. With the present agricultural technique it can be increased on the Dimyat, Vinenka, Red Muscat and Mavrud varieties to 24 eyes, and on the Pamid variety - to 32 eyes per plant both with short and long pruning. Further increase in the fruit bearing load is feasible with the improvement of the agricultural

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

BULGARIA/Cultivated Plants - Fruits. Berries. M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53851

Author : Nedelchev, Zankov, Todorov
Inst : -
Title : Determination of the Most Suitable Pruning for the Dolgar Variety

Orig Pub : Lozarstvo i vinarstvo, 1957, 6, No 5, 5-11

Abstract : No abstract.

Card 1/1

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOV, Z. D.

USSR/Physiology of Plants

Card 1/1

Authors : Stoev, K. D., and Zankov, Z. D.

Title : Time of pruning grape vines

Periodical : Dokl. AN SSSR, 96, Ed. 2, 395 - 398, May 1954

Abstract : Early-fall and late-spring pruning of grape vines results in greater loss of plastic substances which leads to the weakening of the bush and reduction of yield. The most proper time for pruning is the period of rest. The loss of carbohydrates is then very small and the yield is maximum. The period of rest is considered the time when the plant does not vegetate and the temperature is still above freezing, (late-fall or early-spring). Nine references. Tables.

Institution : The Georgi Dimitrov Agricultural Academy, Bulgaria

Presented by : Academician A. L. Kursanov, March 16, 1954

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

STOYEV, K.D.; ZANKOV, Z.D.

Time for cutting back grapevines. Dokl.AN SSSR 96 no.2:395-398 My '54. (MLRA 7:5)

1. Sel'skokhozyaystvennaya Akademiya im. Georgiya Dimitrova (Bolgariya). Predstavleno akademikom A.L.Kursanovym. (Viticulture)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

DYMINA, G.D.; ZAN'KOVA, T.K.

Effect of litter burning on the conditions of environment of one of the meadow types of the Maritime Territory of the Far East. Vest. LGU 20 no.15:15-24 '65. (MIRA 18:9)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOVICH, L.A.; KATS, A.I.

Pneumoconioses in electric welders. Zdrav. Bel. 9 no.3:43-44 Mr '63 (MIRA 16:12)

1. Iz sanitarno-epidemiologicheskoy stantsii Zavodskogo rayona Minska (glavnyy vrach P.F.Filipenko).

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOVICH, L.A., promyshlenno-sanitarnyy vrach; CHIZHIK, N.V., promyshlenno-sanitarnyy vrach

Working conditions, morbidity and industrial traumtism in the Minsk Spare Parts Factory. Zdrav.Bel. 8 no.7:9-11 Jl '62. (MIRA 15:11)

1. Iz sanitarno-epidemiologicheskoy stantsii Zavodskogo rayona gor. Minska (glavnyy vrach P.F.Filipenko).
(MINSK--MEDICINE, INDUSTRIAL)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOVICH, V. P.; SHATALOV, V. F.

From the Experience of Ridding Farms from illness of Horses with Infectious Anemia According to the Method of Doctor of Biological Sciences G. M. Bosh'yan. Report II.
SO: Vet.; Vol 30; No 6; 20; June 53, Unclassified
Trans. #121 by L. Lulich

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

COUNTRY : Poland
CATEGORY : Forestry. Dendrology.

ABS. JOUR. : RZhBiol., No. 14 1958, No. 63192

AUTHOR : Zanowa, Maria
INST. : ~~Section of Dendrology~~, Polish Botanical Society
TITLE : The Nature of the Black Mulberry Tree

ORIG. PUB. : Roczn. Sek. dendrol. Polsk. towarz. bot., 1956, 11, 397-402

ABSTRACT : Because of the variability (from white to almost black) in color of fruit, white mulberry is often confused with black. The latter originates in Persia, Syria and Palestine, where it has been grown for a long time. In the middle ages it appeared in Europe considerably earlier than the white mulberry. The propagation of the white mulberry stopped the cultivation of the black, and at the present time it is found, as a rule, in the wild state. The black mulberry differs from the white in its lesser height, more compact crown, slower growth and in a series of morphological characteristics (described). The fruits of the black mulberry contain less sugar than

CARD: 1/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

Distr: 4E2c(j)/4E3d

The constitution of 2,3-perinaphthoquinoline and its derivatives. Jan Moszew and Wanda Zankowska-Jasińska (Univ. Kraków, Poland). *Roczniki Chem.* 32, 225-33 (1958)(German summary); cf. *C.A.* 50, 342a.—Condensation of acenaphthenone (I) with (*m*-MeC$_6$H$_4$NH)$_2$CS gave 3-(*m*-toluidino)-7-methyl-2,3-perinaphthoquinoline (II), m. 210°. In order to confirm the position 7 of the Me group, I was condensed with 2-chloro-3-methylaniline at 180° or with 2,2'-dichloro-3,3'-dimethylthiourea, m. 154-5°. In all the reactions biacenone, m. 260°, and decacyclene (III), m. 387°, were formed. The structure of II was proved by the Niementowski method [*Ber.* 27, 1394(1894)]. I reacted with anthranilic acid at 110-210° giving III and 4-hydroxy-(2,3-perinaphthoquinoline) (IV), m. 4[illegible], identical with the product of hydrolysis of 4-anilino deriv. of IV (Bz deriv., m. 241°). Condensation of I with 2-amino-3-methylbenzoic acid yielded under similar conditions the 7-Me deriv. of IV, m. 420° (Bz deriv., m. 230-1°), which is identical with the hydrolysis product of II. The results confirm the previous view on the properties of I in reactions with diaryl derivs. of thiourea.

A. Kręglewski

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Distr: 4E2c(j)/4E3d 7 7

Polycyclic condensed compounds of the quinoline group. Perinaphthylenebenzoquinolines. Jan Mostew and Wanda Zankowska-Jasińska (Univ. Kraków, Poland). *Roczniki Chem.* 32, 235–40(1958)(German summary).—High-condensed polycyclic compds. of the quinoline group were prepd. to test their cancerogenic properties. Acenaphthenone (5 g.) was heated 9 hrs. with 15 g. of *sym*-di-β-naphthylthiourea at 220–310°, giving 40% 2,3-perinaphthylene-4-(β-naphthylamino)-5,6-benzoquinoline (I), m. 284–5° ($C_{34}H_{20}$); picrate, m. 294–5°; HCl salt, m. 299–302°. Hydrolysis of 2.5 g. I by 5 g. KOH in 40 ml. EtOH at 200° (4 hrs.) gave the 4-hydroxy analog of I, m. 354–5°; picrate, m. 277–8°; HCl salt, m. 309–10°; Ac deriv., m. 314–6°; Bz deriv., m. 303–5°. The hydroxy group can be quantitatively substituted by Cl upon action of PCl_5 at 150°, yielding 2,3-perinaphthylene-4-chloro-5,6-benzoquinoline, (III), m. 236–7°; picrate, m. 270–1°; HCl salt, m. 254–5°. Heating III with Zn dust at 400–500° 3–4 hrs. gave 2,3-perinaphthylene-5,6-benzoquinoline, m. 269–70°; picrate, m. 328–9°; HCl salt, m. 328–30°. A. Kręglewski

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOWSKA-JASINSKA, W.

Koszew, J. Studies on the mechanism of the synthesis of quinoline compounds. p. 541.
ROCZNIKI CHEMI, Warszawa, Vol. 29, no. 2/3, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOWSKA, JASINSKA, WANDA

Synthesis of 2,3-perinaphthylenequinoline. Jan Moszew- and Wanda Zankowska-Jasińska. *Roczniki Chem.* 28, 439(1954)(French summary); cf. *C.A.* 46, 7103a.—2,3-Perinaphthylene-4-hydroxyquinoline (*loc. cit.*) (1 g.) is warmed with 1.6 g. PCl_5 in 10 ml. $POCl_3$ at 130-40° for 4 hrs. The $POCl_3$ is distd. off, 5 ml. H_2O added and the mixt. made alk. with 50% NaOH to yield 1.00 g. of the 4-Cl deriv. (I), m. 183° (EtOH); picrate, 253°. I (1 g.) mixed with 3 g. Zn powder is placed in a 30 ml. retort with 15 g. Zn, and heated on a sand bath at 300° for 4 hrs. The distillate (0.2 g.), melts at 169-71°, giving pure 2,3-perinaphthylenequinoline (II), m. 185° (EtOH); picrate, m. 220°; benzoate, m. 238-9°. The *5(or 7)-methyl-4-methoxyquinoline deriv.* II (2.5 g.) and 5 g. KOH in 50 ml. EtOH autoclaved at 200° for 4 hrs., dild. with H_2O, and acidified yields the *5(or 7)-methyl-4-hydroxy* deriv. (III) of II, m. 420° (decompn.).

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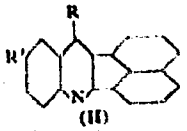
CA

60

Synthesis of derivatives of 2,3-*peri*-naphthalenequinoline. Jan Mauzer and Wanda Zankowska (Univ. Jagiellonski, Krakow, Poland). *Roczniki Chem.* 25, 162–8(1951).—Condensation of 1-acenaphthenone (I) with diaryl derivs. of thiourea produces derivs. of 2,3-*peri*-naphthalenequinoline substituted in the 4-position (12-substituted acenaphtho[1,2-*b*]quinolines) (II). Alc. KOH transforms them to the corresponding 4-HO compds. (II, R = OH). CS(NHPh)$_2$ and I yield at 180–90° the 4-anilino deriv. (III) (II, R = PhNH, R' = H), light-green plates, m. 264° (HCl salt, m. 287°; picrate, m. 252°); 4 hrs. at 300° and 40 atm. transforms II to the HO analog, decomp. 870° (from quinoline). (*p*-MeC$_6$H$_4$NH)$_2$CS and I condense to 2,3-*peri*-naphthalene-4-(*p*-toluidino)-6-methylquinoline (II, R = *p*-MeC$_6$H$_4$NH, R' = Me), yellow needles from C$_6$H$_6$, m. 227.5° (picrate, decomp. 281°), hydrolyzed to the 4-HO analog, light yellow needles, m. 432°. (*p*-MeOC$_6$H$_4$NH)$_2$CS and (*p*-EtOC$_6$H$_4$NH)$_2$CS react similarly, and, after distn. of the unreacted starting materials, yield 4-(*p*-anisidino)-6-methoxyquinoline, m. 231.5° (from EtOH) (picrate, m. 269°), and 4-(*p*-phenetidino)-6-ethoxyquinoline, m. 180–90° (from EtOH) (picrate, m. 252°); both hydrolyzed to 2,3-*peri*-naphthalene-4,6-dihydroxyquinoline, m. 350° (decompn.) (from PhNO$_2$).

I. Z. R.



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COUNTRY : YUGOSLAVIA II
CATEGORY : Chemical Technology. Chemical Products and Their Applications. Fermentation Industry
ABS. JOUR. : RZKhim., No. 23 1959, No. 83797

AUTHOR : Zenko, V.
INST. : -
TITLE : Developments in the Wine-Making

ORIG. PUB. : Aprom.glasnik, 1959, 9, No 1, 15-22

ABSTRACT : No abstract.

CARD: 1/1

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

MOSZEW, J.; ZANKOWSKA-JASINSKA, W.

Characteristic isomerism and transformations of derivatives of 1,2-benzo-3,9-diazaanthracene. Bul chim PAN 12 no.7:447-450 '64.

Ultraviolet spectra of the heterocyclic analogs from carcinogenic hydrocarbons. Ibid.:455-458 '64.

1. Department of Organic Chemistry of Jagiellonian University, Krakow, and Laboratory No.6 of the Institute of Organic Synthesis of the Polish Academy of Sciences. Submitted April 8, 1964.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

MOSZEW, J.; ZANKOWSKA-JASINSKA, W.

Heterocyclic analogs of the carcinogenic hydrocarbons; derivatives of 1,2-benzo-3,9-diazaanthracene with mono-and polycyclic substitutes. Bul chim PAN 12 no.6:403-406 '64.

1. Department of Organic Chemistry of Jagiellonian University, Krakow, and Laboratory No.6 of the Institute of Organic Synthesis of the Polish Academy of Sciences. Submitted April 8, 1964.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANKOWSKA-JASINSKA W.

3961 547.837.0.07

Mostowy J., Zankowska-Jasińska W. The Synthesis of 2,3-Perinaphthylenequinoline.

„Synteza 2,3-perinaftylenochinoliny". Roczniki Chemii(PAN). No. 3, 1964, pp. 439—443.

From the previously obtained compound having the structure of 4-hydroxy-2,3-perinaphthylenequinoline a 4-chloroderivative (yellowish needles, m.p. = 183°) was obtained by the action of phosphorus pentachloride, and from this, by way of reduction, free base viz. 2,3-perinaphthylenequinoline (yellowish plates, m.p. = 185°). Also synthesis was carried out of the new compound having the basic molecular system of 2,3-perinaphthylenequinoline. Condensing acetonaphthenone with thiocarbo-m-toluidide, a compound was obtained which corresponded in composition to 5- or 7-mathyl-4-m-toluidine-2,3-perinaphthylenequinoline (small yellowish plates, m.p. = 216°). Heating this compound with an alcoholic solution of potassium hydroxide, the remaing toluidine in position 4 was separated and substituted by the hydroxyl group (yellow rods, m.p. = 440°).

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

Country : POLAND G
Category : Organic Chemistry. Synthetic Organic Chemistry

Abs. Jour : Ref Zhur - Khim., No 5, 1959, No. 15408

Author : Moszew, J.; Zankowska-Jasinska, W.
Institut. : -
Title : On the Structure of 2,3-peri-Naphthylenoquinoline and Its Derivatives

Orig Pub. : Roczn. chem., 1958, 32, No 2, 225-233

Abstract : In order to prove the position of substitutes in derivatives (I) obtained earlier (Ref Zhur-Khim, 1955, 28953) by condensation of acenaphthenone (II) with $2\text{-}NH_2C_6H_4COOH$ (III), 4-HO-I (IV) was prepared, and by the condensation of II with $2\text{-}NH_2\text{-}4\text{-}CH_3C_6H_3COOH$ (V), 4-HO-7-CH_3-I (VI) was synthesized; along with IV and VI, decacyclene (VII) is formed. During attempts at condensation of II with $2\text{-}Cl\text{-}3\text{-}CH_3C_6H_3NH_2$ (VIII) or $(2\text{-}Cl\text{-}3\text{-}CH_3C_6H_3NH)CS$ (IX), instead

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

G

Country :
Category :

Abs. Jour : Ref Zhur - Khim., No 5, 1959, No. 15408

Author :
Institut. :
Title :

Orig Pub. :

Abstract cont'd. : at 110°, and then for another 24 hours by increasing the temperature to 210°, the triturated melt is extracted with alcohol and then with an alcoholic solution of KOH; from the alkaline extract of HCl, 0.1 g. of IV is separated out, m.p. about 430°; benzoyl derivative (BD), m.p. 241°. The residue which was not dissolved in alcoholic KOH solution (0.45 g.) is VII, m.p. 387° (from xylol). 1.68 g. of II and 1.51 g. of V are heated for 70 hours at

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

Country :
Category :

Abs. Jour : Ref Zhur - Khim., No 5, 1959, No. 15408

Author :
Institut. :
Title :

Orig Pub. :

Abstract cont'd. : of X is obtained, m.p. 260° (from chloroform); from the residue of the extraction, VII is separated out. Analogous results are obtained by the addition of 0.07 g. of VIII·$ZnCl_2$ (two hours, 200°), or 1.35 g. of C_6H_5NCS (four hours, 200°). From the same quantities of II and VIII, with the addition of a few drops of concentrated HCl (20 minutes, 120°), 0.16 g. of X is obtained. 2.5 g. of II and 5 g. of IX are melted at 140°, heated for seven hours at

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

POLAND/Organic Chemistry. Synthetic Organic Chemistry. G

Abs Jour: Ref Zhur-Khim., No 2, 1959, 4728.

Author : Moszew, J. and Zankowska-Jasinska, W.
Inst :
Title : Polycyclic Condensed Compounds of the Quinolinic Series. Perinaphthylenobenzoquinoline.

Orig Pub: Roczniki Chem, 32, No 2, 235-240 (1958) (in Polish with Summaries in German, English and Russian)

Abstract: The condensation of acenaphthenone with di-β-naphthylthiourea at 220-310° has given a substance having an mp of 284-285° (picrate (P) mp 294-295°, hydrochloride (HC) mp 299-302°) and corresponding in composition to 2,3-perinaphthylene-4-β-naphthylamino-5,6-benzoquinoline. Alkaline hydrolysis of the latter followed by treatment with PCl_5 has given 4-hydroxy- (mp 354-355°, P mp 277-278°, HC mp 309-310°, acetate mp 314-316°, benzoate mp 303-305°) and 4-chloro- (mp 236-237°, P mp 270-271°, HC mp 254-255°)-2,3-perinaphthylene-5,6-benzoquinoline. Reduction of the latter compound with zinc dust converts it to 2,3-perinaphthylene-5,6-benzoquinoline, mp 269-270°, P mp 328-329°, HC mp 328-330°. -- D. Vitkovskiy.

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8
POLAND/Organic Chemistry. Synthetic Organic Chemistry. G

Abs Jour: Ref Zhur-Khim., No 2, 1959, 4728.

Card : 2/2

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

PRZELECKA, A.; DABCZYNSKA, D.; ZAN-KOWALCZEWSKA, M.

Cytochemical localization of phospholipids and of some hydrolases in the oocytes of Rana temporaria. Folia morphol 21 no.3:359-361 '62.

1. Department of Biochemistry, Nencki Institute of Experimental Biology, Warsaw. Head of Department: Prof. dr. W. Niemierko.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANHENSKIY, A. G., KALININ, ROSENBERG, and LEBEDEV,

"Georgiy Dmitriyevich Belonovskiy (Microbiologist, 1875-1950, Obituary)," Zhur Mikrobiol, Epidemiol, i Immunobiol, No. 10, pp 3-5, 1950.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

WENDER, M.; ZAMMIEROWSKA, M.

The problem of clinical & anatomopathologic diagnosis of subacute sclerotic leuko-encephalitis. I. Neur. &c. polska 8 no.4:423-434 July-Aug 58.

1. Z Pracowni a Anatomii Patologicznej Instytutu Bunge'a w Antwerpii-Berchem Kierwnik: prof. dr L. Van Bogaret i z Kliniki Neurologicznej W. M. w Poznamu Kierownik: prof. dr A. Dowzenko. Adres: Pozman, ul. Garbary 40 m 5.

(ENCEPHALITIS, diag.
leuko-encephalitis, subacute sclerosing (Pol))

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

SHCHUKIN, Ye.D.; KOCHANOVA, L.A.; ZANOZINA, Z.M.

Some regular features of the effect of structural defects on the strength of glass. Dokl. AN SSSR 160 no.5:1061-1064 F '65. (MIRA 18:2)

1. Otdel dispersnykh sistem Instituta fizicheskoy khimii AN SSSR. Submitted September 26, 1964.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

L 43214-65 EWT(m)/T/EWP(t)/EWT(b)/EWA(c) IJP(c) JD

ACCESSION NR: AP5007664 S/0020/65/160/006/1355/1357

AUTHOR: Shchukin, Ye. D., Zanozina, Z. M., Kochanova, L. A., Likhtman, V. I., Rebinder, P. A. (Academician)

TITLE: The possibility of preparing alloys with a highly dispersed structure by hardening alloy emulsions

SOURCE: AN SSSR. Doklady, v. 160, no. 6, 1965, 1355-1357, and insert facing p. 1333

TOPIC TAGS: alloy structure, dispersed alloy, alloy emulsion hardening, zinc alloy, lead alloy, tin alloy, cast alloy

ABSTRACT: The authors studied the possibility of controlling the structural dispersion of a solid prior to its formation from an emulsion with low interphase tensions, using the Zn-Pb-Sn system as a convenient, readily melting, model (see Fig. 1 of the Enclosure). Samples with [illegible] Pb and Sn and having a combined weight of ~40 g were intensively mixed by vibration, and heated, in tightly closed, cylindrical 20 x 20 mm steel crucibles, to temperatures 50-100C higher than that of the liquid-phase stratification region. Then the temperature was reduced to a set isolated point (T1) within the stratification region. After maintaining the temperature for half an hour to achieve equilibrium the crucibles were cooled at a rate of

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150/sec to the ambient temperature and cut along the cylinder generatrices. The metallographic sections, prepared by electrolytic etching from the halves of the [illegible] were then examined with an MIM-8 microscope. The different structural patterns obtained in several series of experiments, by varying T1, the concentration [illegible] are believed to indicate a possibility of [illegible]

figures.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Physical Chemistry Institute, Academy of Sciences, SSSR)

SUBMITTED: 26Sep64 ENCL: 01 SUB CODE: MM

NO REF SOV: 002 OTHER: 002

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ACCESSION NR: AP5007664

ENCLOSURE: 01

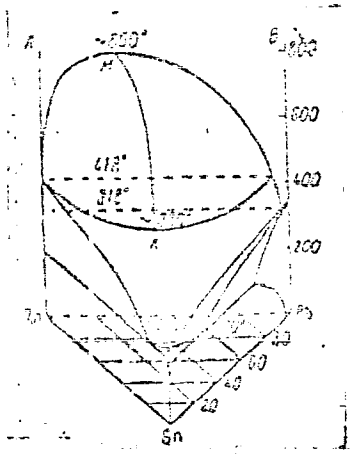

Fig. 1. Phase diagram of the Zn-Pb-Sn system.

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ZANNES, A.N.; ROZMETAYLO, V.M.; TARASOVA, L.P.; SAPELKINA, O.R.

Investigating the metal structure of rails hardened along their full length. Met. i gornorud. prom. no.2:40-41 Mr-Ap '65.
(MIRA 18:5)

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18.1150 SOV/137-59-5-10894

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, pp 207-208 (USSR)

AUTHORS: Kazarnovskiy, D.S., Ravitskaya, T.M., Zannes, A.N., Loyzan, O.R.

TITLE: The Effect of Arsenic on Properties of Rail Steel Quench-Hardened by High Frequency Current

PERIODICAL: Byul. nauchno-tekhn. inform. Ukr. n.-i. in-t metallov, 1958, Nr 6, pp 90 - 103

ABSTRACT: The authors investigated "M-73" grade rail steel of the following composition (in %): C 0.67 - 0.78; Mn 0.78 - 0.97; Si 0.19 - 0.25; S 0.018 - 0.027; P 0.24 - 0.34; As 0.125 - 0.139. The steel was quench-hardened by high-frequency current (500 cycles). To investigate the effect of higher As amounts (> 0.15%) experimental rails with 0.204 - 0.243% As were manufactured. It was established that an As content, increased from 0.125 to 0.24%, did not entail substantial changes in H_B, σ_b, σ_ω and toughness of steel.

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The Effect of Arsenic on Properties of Rail Steel Quench-Hardened by High Frequency Current

after high-frequency quench-hardening. a_k decreased with a higher As content. For instance, in steel with 0.67% C after high-frequency quench-hardening a_k at +20 and -60°C is equal to 6.5 and 4.35 kgm/cm^2 respectively; with 0.125% As, it is 4.45 kgm/cm^2; at 0.24 As it is 3.25 kgm/cm^2.

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ZANNES, A.N.

25(1) PHASE I BOOK EXPLOITATION SOV/2132

Kiyev. Ukrainskiy Nauchno-issledovatel'skiy institut metallov

Tekhnologiya proizvodstva i svoystva chernykh metallov; sbornik (The Manufacture and Characteristics of Ferrous Metals; a collection of articles) Khar'kov, Khar'kovskiy gos.univ. im. A.M. Gor'kogo, 1958. 271 p. (Series: Its: Trudy, vyp. 4) Errata slip inserted. 1,000 copies printed.

Editorial Staff of this book: P.A. Aleksandrov, D.S. Kazarnovskiy, M.I. Kurmanov, N.F. Leve, V.P. Onopriyenko, V.A. Tikhovskiy, and Ya. A. Shneyerov; Ed.: S.S. Liberman; Tech. Ed.: K.O. Gurin

PURPOSE: The book is intended for the scientific personnel of institutes and for engineers and technicians of metallurgical enterprises and other branches of the industry.

COVERAGE: The collection of articles reviews the work carried on at the Institute of Metals on the technology of blast furnaces, open-hearth furnaces, and rolled stock production. It also deals with problems in metallography, heat treatment of ferrous metals and methods for their study. Particular attention is devoted to the preparation of charges and blast furnace practice with increased gas pressure, open-hearth production with oxygen blast and rolling of light profiles. No personalities are mentioned. References accompany each article.

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AVAILABLE: Library of Congress (TN 607.T4)

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SOV/133-58-8-16/30

AUTHORS: Shirokov, A.M., Candidate of Technical Sciences, and Zannes, A.M., Privalova, A.I., and Migol', G.M.

TITLE: Favorable Conditions for Induction-hardening of Various Parts of Equipment (Ratsional'nyye rezhimy induktsionnoy zakalki detaley oborudovaniya)

PERIODICAL: Stal', 1958, Nr 8, pp 730 - 736 (USSR)

ABSTRACT: Optimum conditions for hardening with high-frequency currents on an installation with a rotary generator of 100 kW (2 500 cps) of rolls of various diameters, tooth wheels, crane wheels and brake pulleys were investigated. The results are given in tables and figures. It is concluded that by using the above equipment for hardening a depth of the active layer of 2 - 4 mm can be obtained. The total depth of the hardened layer of up to 10 mm can be obtained. Application of high-frequency hardening brought about an increase in the service life of machine parts, on the average, by 2-3 times.
There are 11 figures, 3 tables and 3 Soviet references.

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Favorable Conditions for Induction-hardening of Various Parts of Equipment

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute) and Zavod "Azovstal'" ("Azovstal'" Works)

1. Metals--Hardening 2. High frequency currents--Applications

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963810005-8

ZANNES, A.N.; SAPELKINA, O.R.; ZUBAREV, V.F.; DEMAKOVA, A.V.; PEREVERZEVA, Ye.G.

Effect of conditions of self-tempering and furnace tempering on the mechanical properties of rails hardened along their entire length by heating with high frequency currents. Izv. vys. ucheb. zav.; chern. met. 7 no.2:118-123 '64.
(MIRA 17:3)

1. Zavod "Azovstal'" i Zhdanovskiy metallurgicheskiy institut.

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SOV/137-59-1-1838

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 243 (USSR)

AUTHOR: Zannes, A. N.

TITLE: Experience in Flame Hardening of Rollers at the "Azovstal'" Plant (Opyt primeneniya plamennoy zakalki prokatnykh valkov na zavode "Azovstal'")

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1956, Vol 10, pp 234-237

ABSTRACT: Bibliographic entry

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